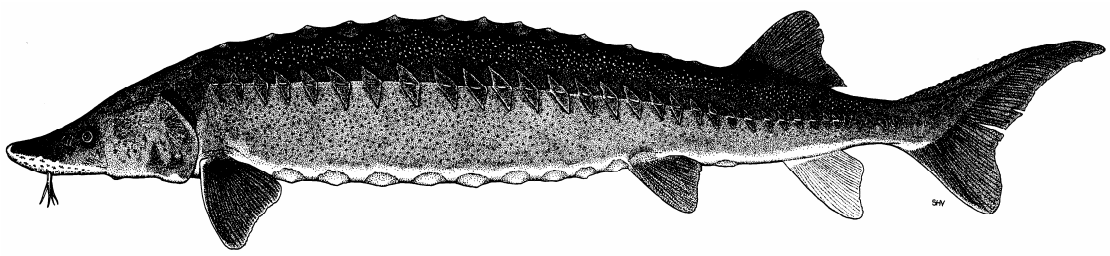
PROCEEDINGS OF THE THIRD

GREAT LAKES LAKE STURGEON COORDINATION MEETING

NOVEMBER 29-30, 2006
SAULT STE. MARIE, MICHIGAN



Lake Sturgeon (*Acipenser fulvescens*)

January 2008

REPORT PREPARED BY:

MEMBERS OF THE U.S. FISH AND WILDLIFE SERVICE GREAT LAKES BASIN ECOSYSTEM TEAM LAKE STURGEON COMMITTEE

James Boase, Robert Elliott, Henry Quinlan, and Betsy Trometer

With Assistance from:

Dr. Nancy Auer, Michigan Technological University
Dr. Ed Baker, Michigan Department of Natural Resources
Dr. Dawn Dittman, USGS Great Lakes Science Center
Brad Eggold, Wisconsin Department of Natural Resources
Dr. Tim Haxton, Ontario Ministry of Natural Resources
Marty Holtgren, Little River Band of Ottawa Indians
Lloyd Mohr, Ontario Ministry of Natural Resources
Dr. Tom Pratt, Department of Fisheries and Oceans Canada

Funded by the Great Lakes Fishery Trust

These proceedings are available online at http://www.fws.gov/midwest/sturgeon.

Table of Contents

Introduction

In June, 2000, the Great Lakes Fishery Trust (Trust) sponsored a workshop to determine research and assessment needs to restore lake sturgeon in the Great Lakes (Holey et al. 2000). The Trust utilized information gathered at the workshop to develop criteria to guide future funding. At the conclusion of that workshop, participants expressed a strong desire to meet annually to continue to share information and communication of sturgeon work across the Great Lakes basin. In 2001, the U.S. Fish and Wildlife Service Great Lakes Basin Ecosystem Team Lake Sturgeon Committee submitted a successful proposal to the Trust to organize and convene a series of three Great Lakes Lake Sturgeon Coordination Meetings. The first Coordination Meeting was convened December 11-12, 2002 in Sault Ste. Marie, Michigan. Feedback received from participants and organizers of the 2002 Coordination Meeting recommended that subsequent meetings be held biennially. The second Great Lakes Lake Sturgeon Coordination Meeting was held in Sault Ste. Marie, Michigan on November 9 -10, 2004. The third Great Lakes Lake Sturgeon Coordination Meeting was held in Sault Ste. Marie, Michigan on November 29 – 30, 2006. These are the proceedings of the third Great Lakes Lake Sturgeon Coordination Meeting.

Meeting Organization and Purpose

The meeting was organized by a steering committee of consisting of representatives from the U.S. Fish and Wildlife Service Great Lakes Basin Ecosystem Team Lake Sturgeon Committee, and state, provincial, tribal and university biologists from across the Great Lakes basin.

James Boase (USFWS)
Rob Elliott (USFWS)
Henry Quinlan (USFWS)
Betsy Trometer (USFWS)
Nancy Auer (Michigan Technological University)
Ed Baker (Michigan DNR)
Dawn Dittman (USGS)
Brad Eggold (Wisconsin DNR)
Tim Haxton (Ontario MNR)
Marty Holtgren (Little River Band of Ottawa Indians)
Lloyd Mohr (Ontario MNR)
Tom Pratt (DFO Canada)

A meeting announcement and invitation to contribute presentations was emailed to over 400 biologists, managers, researchers, students, and the interested public from the Great Lakes region. The meeting announcement was also posted on the Great Lakes Lake Sturgeon Web Page. The purpose of the meeting was the same as it has been for the previous meetings: Provide a biennial forum to foster communication and exchange of information relating to the study, management, and restoration of lake sturgeon in the Great Lakes basin, to address priority research and assessment needs, and to address selected emerging issues.

As with previous meetings, the 2006 Coordination Meeting was designed to present information or address various focus areas during the two day meeting that were either emerging topics or that had not been adequately addressed during previous meetings. The steering committee solicited specific presentations for some focus topics of specific interest and also formed other focus topics based on the abstracts of submitted presentations. Five focus areas were selected including: habitat use and juvenile ecology, genetics and management implications, stream-side rearing, sturgeon legal issues, and assessment technologies. Additional information was presented during the poster session.

Meeting Summary

The 2006 Coordination Meeting was attended by 131 individuals representing 42 different entities. These included representatives from six of the nine Great Lake states, nine Tribal/First Nation natural resource agencies, three U.S. and Canadian federal agencies, one Provincial agency, eleven Universities, five Consulting/Private organizations, five non-governmental organizations, and one commercial fishing operation.

Twenty-six oral presentations were presented at the meeting addressing the 5 general focus areas along with 12 posters. Seven talks addressed the focus area of habitat use and juvenile ecology, six talks addressed the focus area of genetics and management implications, three talks addressed the focus area of stream-side rearing, five talks addressed the focus area of sturgeon legal issues, and five talks addressed the focus area of assessment technologies. Following presentations for each of the five general focus areas a facilitated discussion session was opened to allow presenters to address questions from meeting participants. The presentation schedule, titles, and presenters/authors is/are on pages 7 – 9, and oral and poster presentation abstracts can be found on pages 10 – 22.

A specific focus for this meeting was to address sturgeon legal issues. Presentations were given by five invited experts: Fred Hnytka (DFO Canada), Greg Drogowski (Michigan DNR), Todd Schaller (Wisconsin DNR), Mike Kitt (Wisconsin DNR), and Mary Burnham Curtis (USFWS). Following their presentations, these individuals were joined by Craig Tabor (USFWS), Robert Luke (DFO Canada), and Don Waukechon (Menominee Indian Tribe of Wisconsin) to form a panel of law experts that addressed questions and inquiries from meeting participants. The panel was moderated by Lloyd Mohr (Ontario MNR) and Tom Pratt (DFO Canada). The panel discussion session is paraphrased on pages 23 – 33.

The 13 poster presentations were displayed during an evening social for all participants held on the evening of day one. At the beginning of the social, each presenter was given a few minutes to give a brief verbal summary of their poster. Following the summaries participants were given the opportunity to mingle with the presenters, ask questions and get feedback about their projects. The social also provided participants an opportunity to network with fellow sturgeon enthusiasts in a relaxed setting, and if they were lucky, hear their name called for one of the sturgeon related door prizes.

Four basin oriented groups were formed at the end of the second day as a breakout session. The basin groups were Lake Superior, Lake Michigan, combined Lake Huron and Lake Erie (including Lake St. Clair and Detroit River), and Lake Ontario combined with the St. Lawrence River. This session served as an opportunity for those working or interested in sturgeon related activities on a particular basin to gather and discuss topics of importance to participants and to update lake basin maps depicting lake sturgeon population status. Summary notes from the basin oriented breakout sessions are on pages 34 – 40.

Meeting feedback and comments submitted by participants on the evaluation form are summarized on pages 41 – 43. Meeting participant names, contact and biographical information are on pages 45 – 65.

Agenda

Day 1 (Meeting will be in the Oak/Spruce Room) November 29, 2006

7:45	Registration
8:45	Welcome, Introductions, Meeting Goal, Objectives and Format
9:00	Presentations: Habitat Use and Juvenile Ecology (Moderators/Facilitators, Tim Haxton and Dawn Dittman)
10:20	Break
10:30	Presentations: Habitat Use and Juvenile Ecology (continued)
11:30	Facilitated Discussion Session
12:00	Lunch (on your own)
1:00	Presentations: Genetics and Management Implications (Moderators/Facilitators, Nancy Auer and Rob Elliott)
2:20	Break
2:40	Presentations: Genetics and Management Implications (continued)
3:20	Facilitated Discussion Session
4:00	Presentations: Stream Side Rearing (Moderators/Facilitators, Marty Holtgren and Rob Elliott)
4:45	Facilitated Discussion Session
6:00 - 9:00	Evening Poster Session and Social (In the Tahquamenon Room)

Day 2 (Meeting will be held in the Oak/Spruce Room) November 30, 2006

7:50	Orientation
8:00	Presentations: Sturgeon Legal Issues (Moderators/Facilitators, Lloyd Mohr, Tom Pratt and Henry Quinlan)
8:45	Break
9:00	Presentations: Sturgeon Legal Issues (continued)
10:00	Break
10:15	Panel Discussion Sturgeon Legal Issues
11:30	Lunch (on your own)
12:30	Assessment Technologies (Moderator/Facilitator, Betsy Trometer)
1:45	Facilitated Discussion Session
2:00	Meeting Evaluation and Participant Input for Future Meetings
2:15	Adjourn Main Meeting and Break for Basin Breakout Groups
2:30	Break
2:45	Convene Lake Basin Breakout Groups
4:00	Adjourn (whenever basin groups break up, no reconvening)

Group dinner reservation at local establishment/microbrewery for all those staying overnight

Oral Presentations Titles, Authors and (Moderators)

Some presentations are viewable as pdf files.

Day 1 **November 29, 2006**

9:00 - 12:00 Habitat Use and Juvenile Ecology (Tim Haxton, Dawn Dittman)

9:00 - 9:20 Mike Friday (Ontario MNR)
Spawning habitat enhancement through flow manipulation

9:20 - 9:40 Steve Peake (University of New Brunswick)
The effect of water velocity on adhesion and survival of lake sturgeon eggs in an experimental raceway

9:40 - 10:00 David Caroffino (Purdue University)
Abundance and mortality of early-life stages of lake sturgeon in the Peshtigo River, Wisconsin

10:00 - 10:20 Patrick S. Forsythe (MSU)
Vulnerability of larval lake sturgeon to predation and evaluation of the bigger is better hypothesis

10:20 - 10:30 Break

10:30 - 10:50 Cameron Barth (University of New Brunswick)
Ecology and habitat use of juvenile lake sturgeon downstream of a hydroelectric generating station on the Winnipeg River

10:50 - 11:10 Katie Lord Donald (UM)
Juvenile sturgeon movement patterns and habitat utilization in the St. Clair River

11:10 -11:30 Dan Daugherty/Trent Sutton (Purdue University)
Determination of lake sturgeon habitat availability in northern Lake Michigan tributaries: applications to the restoration process

11:30 - 12:00 Facilitated Discussion Session

1:00 - 4:00 Genetics and Management Implications (Nancy Auer, Rob Elliott)

1:00 - 1:20 Andrea Drauch (UC Davis)
Evaluating the usefulness of a remnant lake sturgeon population as a possible source for reintroductions into the Ohio River drainage

1:20 - 1:40 Kim T. Scribner (MSU)
Reproductive ecology and conservation status of lake sturgeon, *Acipenser fulvescens:* Inferences based on genetic determination of parentage

1:40 - 2:00 Kim Scribner, Kristen Bott (MSU) and Amy Welsh (SUNY)
Genetic assignment of open water stocks to rivers of origin and comparative analyses of recruitment in lake sturgeon

2:00 - 2:20 James A. Crossman (MSU)
Quantification of genetic and environmental factors on variation among early life history traits in lake sturgeon

Break 2:20 - 2:40

2:40 - 3:00 Amy M. Schueller (MSU)
Evaluation of lake sturgeon stocking strategies using an individual-based model

3:00 - 3:20 Amy Welsh (UC Davis and SUNY Oswego)
Development of Lake Sturgeon Genetic Stocking Guidelines

3:20 - 4:00 Facilitated Discussion Session

4:00 - 5:00 Stream Side Rearing (Marty Holtgren, Rob Elliott)

Marty Holtgren (Little River Band of Ottawa Indians)
Rearing assistance using stream side rearing on the Manistee River

Ed Baker (Michigan DNR)
Reintroduction using stream side rearing on the Whitefish & Milwaukee rivers

Marc White (Riveredge Nature Center)
Volunteer involvement in streamside rearing project on the Milwaukee River

4:45 - 5:00 Facilitated Discussion Session

Day 2 November 30, 2006

8:00 - 10:15 Sturgeon Legal Issues (Lloyd Mohr, Tom Pratt)

8:00 - 8:15 Fred Hnytka (DFO Canada)

Species at Risk Act and Recovery of the Lake Sturgeon

8:15 - 8:30 Greg Drogowski (Michigan DNR Law)

Poaching Prevention/ Citizen Watch Black River

8:30 - 8:45 Todd Schaller (WDNR Law)

Lake Winnebago sturgeon spearing and spring spawning on the Wolf River enforcement program

8:45 - 9:00 Break

9:00 - 9:15 Mike Kitt (WDNR Conservation Warden)

Menominee River fishery enforcement program

9:15 - 10:00 Steve Fain/Mary Burnham Curtis(USFWS) Sturgeon Forensics

1) ID of caviars in trade - at the species, river system, and individual levels

2) Distinguishing between caviars from aquaculture raised and wild caught fish

3) Establishing genetic registries for brood stock in aquaculture operations

10:00 - 10:15 Break

10:15 - 11:30 Panel Discussion Sturgeon Legal Issues (Tom Pratt, Lloyd Mohr)

Fred Hnytka (DFO Canada

Greg Drogowski (Michigan DNR LE)

Todd Schaller (WDNR LE)

Mike Kitt (WDNR LE)

Mary Burnham Curtis (USFWS Forensics)

Craig Tabor (USFWS LE)

Robert Luke (DFO Conservation & Protection)

Don Waukechon (Menominee Indian Tribe of Wisconsin, Law Enforcement Department Director)

12:30 - 2:00 Assessment Technologies (Betsy Trometer)

12:30 - 12:45 Larry Hildebrand (Golder Associates Ltd.)

White sturgeon research and recovery in the Upper Columbia River

12:45 - 1:00 Chris Pullen (Golder Associates)

Use of a stream side flow-through holding system as part of a lake sturgeon (*Acipenser fulvescens*) larval survival study

1:00 - 1:15 Nancy Auer (MTU)

Hydroacoustics

1:15 - 1:30 Tom Pratt/Lisa O'Connor (DFO)

Additional potential for PIT technology in lake sturgeon management

1:30 - 1:45 Henry Quinlan (USFWS)

PIT tagging standardization, gear demonstration and distribution, and web based PIT tagging data base

1:45 - 2:00 Discussion Session

Poster Presentations Titles and Authors

Some posters are viewable as pdf files.

Day 1 (Evening) November 29, 2006

Ed Baker (Michigan DNR)
Characteristics of spawning lake sturgeon in the Black River, 2001-2006

David Bos (Purdue University)
Genetic determination of lake sturgeon sex

Philip Cochran/Rob Elliott (Missouri Department of Conservation/USFWS)
Historical distribution of lake sturgeon in the Lake Michigan Basin

Dawn Dittman (USGS)
Assessment of Lake Sturgeon Habitat in Lake Ontario and St. Lawrence River Tributaries

Dawn Dittman (USGS)
New York Lake Sturgeon Projects

Barbara I. Evans (LSSU)
Retinal development and light response in larval lake sturgeon

Jeannette Krieger-Kanefsky (OSU)
Investigation of 18S rRNA gene variant expression in lake sturgeon tissues

Heidi Keuler (UW La Crosse and USFWS)
Lake sturgeon (*Acipenser fulvescens*) growth and condition factors in Legend Lake and the Wolf River/Lake Winnebago System of northeastern Wisconsin

Tracy Kolb (MSU) and Bill Taylor (MSU)
Developing an information infrastructure for North American sturgeon

Scott Koproski (USFWS) and Roger Greil (LSSU)
Adult lake sturgeon movement patterns in the St Marys River

Travis Moore (Missouri Department of Conservation)
Lake sturgeon capture methods and habitat use in the lower pooled portion of the Upper Mississippi River, Missouri

Holly Patrick (Purdue University)
Host-size selection and lethality of lake sturgeon by sea lamprey (interactive poster/presentation)

Mike Thomas (Michigan DNR)
Size does matter (at least for hooks)

Abstracts - Oral Presentations

Habitat Use and Juvenile Ecology:

Mike Friday (Ontario MNR Upper Great Lakes Management Unit) - Spawning Habitat Enhancement through Flow Manipulation [full presentation (1.46 MB pdf)]

Description: From 2004 to 2006 Ontario Power Generation provided flow over Kakabeka Falls (on the Kaministiquia River, ON) to allow adult sturgeon access to traditional spawning grounds and facilitate successful spawning, hatch and larval drift (23 m^3/sec was provided in 2004 and 2005; 17 m^3/sec was provided in 2006). This area is often dewatered during the period of spawning for power production and scenic flows for Kakabeka Falls Provincial Park. To monitor sturgeon movements into the spawning area radio telemetry was utilized. Adult sturgeon were tagged in the lower river (with external radio transmitters) when they were known to be migrating upstream to spawn. Their movement into the spawning area and migration back downstream was monitored using an ATS data logger. Larval drift netting was carried out to document spawning success under these flow regimes.

Stephan Peake (University of New Brunswick) - The effect of water velocity on adhesion and survival of lake sturgeon eggs in an experimental raceway [full presentation (438 KB pdf)]

Description: This study examined the effect of water velocity (range: ~ 8 to 26 cm/s) on adhesion and development of lake sturgeon eggs in a 10-m long Plexiglas raceway. Eight groups of 25 fertilized eggs were deposited along a velocity gradient in the raceway and monitored during development. Most eggs adhered initially; however, those in the 3 fastest areas began to break off in a time dependent manner during the first 24 h, after which the numbers of eggs failing to adhere stabilized. By day three, fungal infections were apparent in the 4 groups exposed to the slowest moving water, and deaths due to fungal infections increased in a time dependent manner throughout the rest of the study. By day six, all lake sturgeon eggs in the slowest 2 velocities were dead, and adhesion failure began in those remaining in the 4 fastest areas. By day eight, no eggs were left attached in the 2 fastest areas. In summary, the number of lake sturgeon eggs that hatched relative to water velocity approximated a normal distribution, with the peak located at approximately 16 cm/s, and lake sturgeon eggs exposed to lower velocities tended to die of fungal infections, while those at higher speeds became dislodged. As such, water velocities around 16 cm/s may be optimal for lake sturgeon eggs distributed on smooth surfaces (e.g. bedrock), Furthermore, the capture of large numbers of drifting eggs at spawning sites may indicate reproductive activity; however, it may also be indicative of less than ideal habitat.

David C. Caroffino (Purdue University) - Abundance and mortality of early-life stages of lake sturgeon in the Peshtigo River, Wisconsin [full presentation (2.33 MB pdf)]

Description: If lake sturgeon *Acipenser fulvescens* restoration is to be successful, a requirement is the thorough understanding of recruitment barriers, such as early life stage mortality. The objectives of this study were to estimate egg, larval, and age-0 juvenile abundance, and to identify and quantify sources of predation for these early life stages. Eggs, larvae, and age-0 juveniles were captured using egg mats, drift nets, and wading surveys, respectively, from April through August 2006. Potential predators were captured using gill nets and electrofishing from May through August 2006. Three distinct spawning events were observed, and the combined estimate of egg deposition was 714,399 (95%CI: 432,100 – 997,221). Catches of larvae during the drift period totaled 190 individuals, yielding an estimate of 3,260 drifting larvae (95% CI: 829 – 6,776). Fifty age-0 juveniles were

marked in the lower river, with 27 subsequently recaptured, yielding an absolute abundance of 75 fish (95%CI: 54-126). Stomach contents were examined from 357 potential predators. Sturgeon eggs were present in only one predator (northern hog sucker *Hypentelium nigricans*), and no evidence of either larval or age-0 juvenile life stage consumption was found. These results suggest that early life predation may not be a significant barrier to sturgeon recruitment; however, more intensive sampling must occur to ensure that predation is simply not being detected.

Patrick S. Forsythe (Michigan State University) - Vulnerability of larval lake sturgeon to predation and evaluation of the bigger is better hypothesis [full presentation (3.28 MB pdf)]

Description: Lake sturgeon (*Acipenser fulvescens*) have experienced dramatic declines in abundance and distribution. Though conservation plans have been implemented, many populations have not recovered numerically, suggesting unknown barriers to recruitment, likely during early life history stages. Restoration planning has been hampered by the paucity of information regarding inter-annual variation in natural reproduction and of abiotic or biotic factors underlying recruitment**.** Much of the work dedicated to explain recruitment variation of fish species has focused on the larval stage because of high suspected rates of mortality. Predation is suspected to be a significant source of mortality in lake sturgeon. However, larval or juvenile fish have not been found in the stomachs of predators and mortality rates remain unknown. Our primary objectives were to determine the initial abundance of larval lake sturgeon drifting from spawning areas over consecutive evenings, describe the drifting behavior of individuals as they move down-stream, estimate the magnitude of mortality of individuals dispersing from the spawning areas, and demonstrate the vulnerability of larvae to different candidate predators in a laboratory setting. Laboratory and field data are also used to provide an empirical test of the "bigger is better hypothesis". We are interested in determining if directional selection favors the survival of larger offspring dispersing from the spawning grounds. Preliminary results indicate that mortality was extensive during out-migration and that larvae were extremely vulnerable to predation by fish. It is possible that recruitment is most limited by extremely high rates of mortality immediately following hatch and through initial drift.

Cameron Barth (University of Manitoba) - Ecology and habitat use of juvenile lake sturgeon downstream of a hydroelectric generating station on the Winnipeg River [full presentation (2.94 MB pdf)]

Description: Information related to the general ecology of juvenile lake sturgeon in a large impounded river is relatively scarce. As such, we studied habitat use, movements and feeding in a population of fish downstream of a hydroelectric generating station on the Winnipeg River. We found a large population of juvenile fish that inhabited deep, flat-bottomed areas with a detectable current, from the face of the dam to approximately 14 km downstream. Depth appeared to be the strongest habitat variable. Fish were concentrated in these areas and appeared to segregate themselves from other sympatric species. During spring, most fish stomachs contained large amounts of Dipterans; however, as summer progressed, gut contents became more diverse and stomach fullness declined. Recapture information suggests that juvenile growth is relatively slow (2 to 5 cm from spring to fall). Preliminary age analyses indicate that 1+ lake sturgeon were between 18 and 23 cm long by the end of their second summer. As we caught very few fish smaller than 18 cm, it is unlikely that any age-0 fish were caught, and as such the ecology of this group remains largely unknown. Nevertheless, preliminary results of this study indicate that riverine areas immediately downstream of a hydroelectric generating station can contain suitable spawning and nursery habitat for lake sturgeon.

Katie Lord Donald (University of Michigan) - Movements and habitat use of juvenile lake sturgeon in the North Channel of the St. Clair River

Description:
- Movement patterns of juvenile sturgeon in the North Channel of the St. Clair River
- General habitat characteristics
- Trends found during study
- Using information as a predictor in other systems

Dan Daugherty (Purdue University) - Determination of lake sturgeon habitat availability in northern Lake Michigan tributaries: applications to the restoration process [full presentation (1.78 MB pdf)]

Description: Lake sturgeon *Acipenser fulvescens* have experienced a decline in abundance, distribution, and loss or fragmentation of crucial habitats since the early 1800s. Assessments of remnant lake sturgeon spawning populations in Great Lakes tributaries over the last two decades have focused on the estimation of population-based parameters such as abundance, survival, growth, and habitat use. However, few studies have determined the availability and distribution of habitats for lake sturgeon in these systems. Without this information, determination of the most appropriate management and restoration strategies in each system is difficult. The objective of our study was to characterize and quantify habitats for all riverine life stages of lake sturgeon (i.e., egg, larval, juvenile, and staging/spawning adult) in ten northern Lake Michigan tributaries. Georeferenced habitat sampling was conducted during 2004 and 2005 to develop spatially-explicit habitat models in a geographic information system based on lake sturgeon habitat suitability indices for each life-history stage. The resulting habitat models were then used to determine quality, quantity, distribution, and current and potential accessibility to habitats upstream of dam locations. The habitat-based information collected from these models, coupled with our understanding of current population status in these systems, were utilized to determine appropriate lake sturgeon restoration strategies within each system.

Genetics and Management Implications

Andrea Drauch (UC Davis) - Evaluating the usefulness of a remnant lake sturgeon population as a possible source for reintroductions into the Ohio River drainage [full presentation (1.17 MB pdf)]

Description: Lake sturgeon were once a common species in the Ohio River drainage; however, impoundment, pollution, habitat destruction, and overharvest have contributed to massive population declines in this system. Currently, the White River lake sturgeon population is thought to be the last remaining lake sturgeon population in the Ohio River drainage. Several agencies have proposed reintroducing lake sturgeon from the White River to appropriate areas in the Ohio River system. In order to assess the genetic suitability of the remnant White River lake sturgeon population as a source for reintroductions into the Ohio River drainage, we used nuclear and mitochondrial markers to evaluate its genetic diversity, genetic distinctiveness, and genetic integrity. The White River population exhibited slightly lower levels of genetic diversity than other lake sturgeon populations. However, the population's two private microsatellite alleles and three private haplotypes suggest a unique evolutionary trajectory. Significant genetic structure was identified between the White River and seven additional lake sturgeon populations, suggesting its genetic distinctiveness from other stocks. Population assignment tests revealed a single putative migrant in the White River, indicating the population has almost completely maintained its genetic integrity. These data indicate that the White River population may be the most suitable source population for future lake sturgeon reintroductions throughout the Ohio River drainage. Furthermore, the White River population appears

to be a reservoir of unique genetic information and reintroduction may become a necessary strategy to ensure the persistence of this important lineage.

Kim T. Scribner (MSU) - Reproductive ecology and conservation status of lake sturgeon, *Acipenser fulvescens:* Inferences based on genetic determination of parentage

Description: Molecular genetic markers have been used widely to provide valuable insights into mating systems and to estimate reproductive success for many fish species, including species of conservation concern. We used microsatellite markers to determine parentage for a remnant population of lake sturgeon in the Black River system in Michigan. Parentage data were used to estimate phenotypic, demographic, and ecological correlates of male and female reproductive success. Polygyny and polyandry were common, with males and females mating with an average of 3.10 and 1.93 mates, respectively. Despite recent reductions in population size, and recruitment of hatchery fish into the adult reproductive population, we did not observe evidence of inbreeding (matings of related individuals). Variance in reproductive success was high in both males and females. On average, adults whose offspring migrated downstream during a more constrained time period produced fewer offspring than individuals whose offspring migrated downstream over a more protracted time period. Body size (and thus age) was not correlated with reproductive success. We observed a significant relationship between mate number and the number of offspring produced, suggesting that adults increase their reproductive success by distributing gametes among multiple mates and by spawning during multiple or more protracted periods of time. Estimates of the effective number of breeders were 44% and 47% of the census number of breeders when N_b was estimated from parentage data and temporal changes in allele frequencies, respectively. We discuss the implications of the species reproductive ecology in light of alternative supplementation strategies under consideration and in the context of aspects of species' early larval life history.

Kristin Bott (Michigan State University) - Analyses of lake sturgeon recruitment over multiple spatial and temporal scales using genetic and phenotypic data

Description: Lake sturgeon population numbers have declined dramatically due to anthropogenic disturbance in open-waters of the Great Lakes and in stream spawning habitats. The effects of disturbance have likely varied in both magnitude and duration among populations, which has significant implications for basin-wide recovery efforts, particularly when individuals from different natal streams readily cross management boundaries. Estimation of temporal and spatial variation in stock recruitment is exceedingly difficult for lake sturgeon because individuals spend much of an extended pre-reproductive period in open waters, geographically removed from natal rivers. Because sturgeon from different rivers across Lake Michigan are highly differentiated genetically, and based on the availability of established size-age relationships, we provide estimates both age and population of origin for individuals, including those collected from different open-water habitats. We utilize estimates of uncertainty in age and river assignments to establish cohorts for individual rivers, allowing estimates and comparisons of recruitment among and within rivers over time. Analyses indicate that individuals from different tributaries of Lake Michigan are not uniformly distributed across open-water habitats of the basin. We observed similarities in year to year patterns of recruitment among populations that may be tied to inter-annual variation in weather or other environmental regimes. Estimates of recruitment and differential occupancy of lake habitats will be discussed relative to temporal and spatial variation in environmental quality and relative to future restoration goals.

James A. Crossman (Michigan State University) - Quantification of genetic and environmental factors on variation among early life history traits in lake sturgeon [full presentation (2.52 MB pdf)]

Description: Variation in early life history traits of larval fish can be attributed to both genetic and environmental factors. Quantification of causal factors underlying variation in these traits at important transition periods in life is critical to forecasting stock recruitment and to designs of management programs for imperiled species, including lake sturgeon. It is essential that we determine the magnitude and direction of covariation among these traits. Studies on lake sturgeon depicting contributions of genetic or environmental sources to variation among traits and how these sources relate to growth and survival are lacking. Accordingly, we examined major factors governing both embryonic and yolk-sac larvae growth and survival under known genetic and environmental sources using a streamside rearing facility on the Upper Black River, Michigan. Genetic sources included the known relatedness, biological attributes, and reproductive success of adult lake sturgeon used in artificial crosses while environmental sources included temperature, dissolved oxygen, and refuge and resource availability. Specific objectives were to, (1) determine if variation in development at the egg and larval stages were influenced by genetic or environmental factors, (2) determine the influence of individual female size and condition on variability in egg and larval size at hatch, yolk-sac volume at hatch, yolk-sac absorption rate, and egg and larval mortality, and (3) determine the effects of refuge and resource availability on yolk-sac absorption and growth within and among half-sib family groups. Conclusions from this work will provide insight into the magnitude of genetic and environmental contributions to individual survival and stock recruitment.

Amy M. Schueller (Michigan State University) - Evaluation of lake sturgeon stocking strategies using an individual-based model [full presentation (655 KB pdf)]

Description: Lake sturgeon restoration is a priority throughout the Great Lakes basin, where sturgeon have been reduced to less than 1% of historic levels due to habitat degradation, over-harvest, and fragmentation of spawning populations. Stocking has generally been embraced as a component of rehabilitation, but difficulty has arisen when prioritizing the number of lake sturgeon to stock and parentage of those fish. We determined stocking strategies for lake sturgeon that maintain population growth across a range of initial population sizes, and we determined implications of stocking strategies on the accrual of inbreeding. An individual based modeling approach was developed that represented the demographics and genetics of lake sturgeon. We ran the model across a range of initial population sizes to determine stocking strategies that achieve positive population growth and best maintain genetic integrity. Higher stocking rates are required at smaller initial population sizes to avoid population extinction and inbreeding, and larger numbers of parents for stocking purposes are needed to reduce the risk of inbreeding. Stocking strategies need to be specific to population size. This research will help to ensure the sustainability of the lake sturgeon within the Great Lakes basin by developing optimal stocking strategies to maximize population growth rate while incorporating concerns about inbreeding.

Amy Welsh (SUNY) - Development of Lake Sturgeon Genetic Stocking Guidelines [full presentation (338 KB pdf)]

Stocking of lake sturgeon in various regions of the Great Lakes is becoming an increasingly popular management strategy. However, several genetic risks are inherent in stocking, including outbreeding depression, loss of genetic diversity, and artificial selection. A draft set of guidelines for stocking has been developed to minimize these risks and support lake sturgeon rehabilitation in the Great Lakes. The guidelines are relevant to the entire Great Lakes and will provide guidance to the development of

lake-specific management plans. We developed microsatellite markers and standardized data, protocols which enabled us to combine genetic data from multiple laboratories. This dataset was used to identify genetic stocking units (GSUs). Eight GSUs were identified throughout the Great Lakes. Criteria for the identification of priority populations for genetic preservation were established such as high levels of genetic differentiation. A decision tree was created, incorporating the above information, to foster selection of appropriate stocking sites and to assist managers in choosing appropriate donor populations. Finally, we included recommendations for the design and implementation of stocking programs. Recommendations are provided for the number of consecutive years stocking should occur, the number of adults to use for gamete collection, rearing procedures in the hatchery, number of individuals to be stocked, and post-stocking monitoring procedures.

Stream Side Rearing

Marty Holtgren (Little River Band of Ottawa Indians) - Operation and evaluation of a streamside rearing facility for lake sturgeon in the Manistee River, MI [full presentation (2.29 MB pdf)]

Description: The Little River Band of Ottawa Indians has operated a streamside rearing facility on the Manistee River for lake sturgeon since 2004. The facility has been upgraded each year with modified rearing protocols and new equipment. In 2006 we implemented preventative disease treatments, 24 h feeding of sturgeon with brine shrimp and bloodworms, and increased filtration and clarifying of incoming river water. Throughout fish rearing we collected measurements of growth, determined condition factors, and recorded mortality. Growth rates and condition factors were compared between wild and reared fish. Growth of streamside reared fish was also compared against hatchery reared fish. External radio-transmitters were attached to 10 streamside reared fish and 2 wild-captured to compare habitat use and river retention. The results will be the topic of this presentation.

Ed Baker (Michigan DNR) - Lake Sturgeon Restoration Using Streamside Rearing Facilities on Four Lake Michigan Tributaries [full presentation (2.16 MB pdf)]

Marc White (Riveredge Nature Center) - Use of volunteers in the daily operation of a lake sturgeon streamside rearing facility on the Milwaukee River, WI [full presentation (5.91 MB pdf)]

Description: In the spring of 2006, Riveredge Nature Center undertook a partnership with the USFWS, WDNR, The Little River Band of Ottawa Indians and UWSP to operate a streamside rearing facility on the Milwaukee River, WI with the goal of rearing, imprinting and releasing 1000-1500 Lake Sturgeon/year over the next 25 years. Although grant funds are expected to cover the initial three years of this effort, funding for the remaining 22 years of operation has not been secured. Given the uncertainty of long-term project funding, Riveredge Nature Center has implemented a staff-supported, volunteer based model for the daily operation of the SRF. During the 2006 rearing season, Riveredge staff has recruited, trained and supported a group of 26 volunteers in the daily operation of the Milwaukee River Lake Sturgeon SRF. This presentation will highlight the challenges and opportunities that come with volunteer operation of Lake Sturgeon Streamside Rearing Facilities.

Sturgeon Legal Issues

Fred Hnytka (DFO Winnipeg) - *Species at Risk Act* and Recovery of the lake sturgeon in Canada [full presentation (852 KB pdf)]

Greg Drogowski (Michigan DNR) - Poaching prevention and the Citizen Watch Program on the Black River, MI

Todd Schaller (Wisconsin DNR) - Lake Winnebago sturgeon spearing, spring spawning and the Wolf River Enforcement Program [full presentation (2.33 MB pdf)]

Description: Overview of Lake Sturgeon law enforcement efforts on the Lake Winnebago System (East Central Wisconsin). A very unique resource that creates some very unique enforcement challenges. Focusing on enforcement efforts related to the Lake Winnebago and Upriver Lakes Sturgeon Spearing Season and the Sturgeon Guard program on the Wolf River system.

Mike Kitt (Wisconsin DNR) - Menominee River Fishery Enforcement Program [full presentation (1.22 MB pdf)]

Mary Burnham Curtis (USFWS Forensics)
a) ID of caviars in trade - at the species, river system, and individual levels
b) Distinguishing between caviars from aquaculture raised and wild caught fish
c) Establishing genetic registries for brood stock in aquaculture operations

Assessment Technologies

Larry Hildebrand (Golder Associates Ltd.) - White sturgeon research and recovery in the Upper Columbia River

Description: In the last decade, white sturgeon (*Acipenser transmontanus*) populations in the upper Columbia River basin have been the subject of intensive research and recovery efforts. These populations experience frequent recruitment failures and as a result, the species was recently listed as endangered under the Canadian Species at Risk Act. This talk provides an overview of research methods and findings to date, describes the recovery process, and discusses potential causes of recruitment failure.

Chris Pullen (Golder Associates Ltd.) - Use of a stream side flow-through holding system as part of a lake sturgeon (*Acipenser fulvescens*) larval survival study [full presentation (2.70 MB pdf)]

Description: As part of a lake sturgeon (*Acipenser fulvescens*) annual monitoring program on the Groundhog River, located 75 km northwest of Timmins, ON Golder Associates Ltd. has conducted a sturgeon egg incubation and survival study annually since 2004. . The purpose of the egg incubation and survival study component is to evaluate the potential for exposure impacts on fertilized eggs by treated mine water effluent from the Montcalm Mine, operated by Xstrata Nickel (formerly Falconbridge Limited).

As an addition to the 2006 monitoring program, post-hatch larvae were held for 48 hours in reference and exposure conditions both in the river and in a stream side flow though system to assist in quantifying effluent effects on yolk sac larvae. The study was conducted *in situ* to account for synergistic environmental effects.

The intent of the parallel flow through holding system was to act as a controlled environment to *in-situ* riverine larval holding conditions. We feel that in addition to the data gathered, the design,

construction and operation of the system may prove to be a practical methodology for other lake sturgeon egg incubation and larval fish studies at remote sites.

Nancy Auer (Michigan Technological University) - Rapid assessment of lake sturgeon spawning stocks using fixed-location, split-beam sonar technology

Description: Accurate assessment of lake sturgeon stocks can be compromised by weather, water level fluctuations, availability of personnel and the unique biology and habits of the species. Fixed-location, split-beam sonar technology was successfully applied to identify number of adult lake sturgeon moving upstream and downstream for spawning in the Sturgeon River, Michigan May to June 2004. We used a Hydroacoustic Technology Inc. model 241 split-beam echo-sounder operating at 200 kHz and a single 4.0 x 10º elliptical-beam transducer with a near field range of 0.1 m set perpendicular to the river flow. Data collected from migrating lake sturgeon included swimming speed, range from transducer, time and date of passage, and target strength. The spawning population of lake sturgeon was estimated to be at 350 to 400 fish with almost equal numbers of fish being seen moving upstream as downstream. Most fish were recorded moving within the mid-section of the river, 1.5 – 1.65 m deep, and swimming speeds upstream were slower than those for downstream moving fish. Our results show that spilt-beam sonar can be applied to lake sturgeon assessments, without the stress of actually handling these large, pre-spawning fish and with greater coverage of population.

Lisa O'Connor (DFO Sault Ste. Marie, ON) - Additional potential for PIT technology in lake sturgeon management [full presentation (1.29 MB pdf)]

Description: While tagging lake sturgeon with passive integrated transponder (PIT) tags for individual identification has become part of the standardized protocol for agencies around the Great Lakes, there remains the potential for a much wider application of the technology. Remote detector stations and instream antennae could provide valuable basic life history information (frequency of spawning, stream fidelity, mortality), data on the timing of spawning and other movements, population estimates (when used in combination with a capture program), and a long-term population monitoring tool. We will describe a different PIT tag and antennae system that we use for other species, and provide examples of the data that we collect with minimal effort.

Henry Quinlan (USFWS Ashland) - PIT tagging standardization, gear demonstration and distribution, and web based PIT tagging data base [full presentation (654 KB pdf)]

Description: Efforts to rehabilitate lake sturgeon in the Great Lakes can be greatly enhanced by agency cooperation basinwide. Fishery biologists throughout the Great Lakes collect data on lake sturgeon to assist efforts to restore sturgeon populations to their wide range of former habitats. Individual lake sturgeons are known to utilize multiple Great Lakes, making cooperation and communication among biologists from different states and countries paramount to increasing our knowledge about their status and habits. Over the last half dozen years, biologists have increasingly used Passive Integrated Transponder (PIT) tags to individually mark lake sturgeon captured and released. When a tagged sturgeon is recaptured, biologists can learn from its movement and how much is has grown since it was initially tagged.

Abstracts - Poster Presentations

Edward A. Baker (Michigan DNR), Patrick Forsythe (Michigan State University), James Crossman (Michigan State University), Kim T. Scribner (Michigan State University) and Kregg M. Smith (Michigan DNR) - Characteristics of spawning lake sturgeon in the Black River, 2001-06

Description: Data on lake sturgeon spawner abundance and demographic characteristics are critical to forecasting recruitment and for prioritizing populations for management action. Great Lakes populations are exceedingly difficult to study because of extremely low abundance and because the fish spawn in large rivers that are difficult to sample. The lake sturgeon population in Black Lake, Michigan is uniquely suited to provide critical background on adult ecology and demographics because of its large size, degree of reproductive isolation, and vulnerability of spawning fish to capture. We have intensively sampled spawning lake sturgeon over 6 consecutive years (2001-2006) in the upper Black River. The number of fish sampled annually has varied from 101 in 2004 to 234 in 2006; the male to female sex ratio has varied annually from 1.6:1 to 2.9:1. The length range of lake sturgeon has been similar among years and ranged from 111-192 cm. Estimates of spawning periodicity ranged from 1-5 years for males and 2-5 years for females with average periodicity of 2 and 3 years, respectively. Date of first spawning has varied from 20 April to 7 May among years, the end of spawning activity has ranged from 19 to 26 May, and the duration of the spawning run has ranged from 18 to 36 days. Based on adult capture dates and observed spawning activity there have been multiple spawning events within each year and males were observed to spawn during multiple periods within a single year. There was no clear pattern in the timing of spawning for individual fish recaptured among years.

David Bos (Purdue University) - Genetic determination of lake sturgeon sex

Philip Cochran (Saint Mary's University of Minnesota), Robert Elliott (USFWS Green Bay), Kevin Olson (Saint Mary's University of Minnesota) and Terrance Martin (Illinois State Musuem) - Historical distribution of lake sturgeon (*Acipenser fulvescens*) in the Lake Michigan Basin [poster (2.59 MB pdf)]

Description: As part of an attempt to reconstruct the original distribution and relative abundance of lake sturgeon in tributaries to Lake Michigan, we surveyed old newspapers (mid-1800s to early 1900s) and other documents for accounts of sturgeon captured by sport and commercial fishers. We also reviewed the zooarcheological literature for records of sturgeon remains from prehistoric sites. We are especially interested in reports of sturgeon from sites to which they no longer have access because of the construction of dams that have blocked upstream spawning migrations. Over 200 records that can be plotted with some degree of accuracy were obtained. Resulting maps reveal a somewhat broader distribution than previously published maps based on museum specimens, but there were few unequivocal reports of sturgeon from reaches above dams in cases where they were not already known to have occurred in those reaches. This may be due in part to the fact that dams were constructed in many regions prior to the first printing of newspapers. Based on what has been published, the zooarcheological record seems more complete for the Michigan portion of the basin.

Dawn Dittman (USGS Great Lakes Science Center) - Assessment of lake sturgeon habitat in Lake Ontario and St. Lawrence River tributaries [view poster (171 KB pdf)]

Description: One of the top priorities in restoration of native fish communities is the assessment of the current available habitat quality in the target ecosystem. In response to the imperiled status of one key native species, the lake sturgeon (Acipenser fulvescens), the New York Department of Environmental Conservation formulated a recovery plan to maintain and establish lake sturgeon populations in at least eight separate locations. As part of the implementation of the recovery plan, pre and post stocking assessments of sturgeon habitat quality and use have been conducted in two very different rivers. These rivers were the Genesee River - a tributary to Lake Ontario (9 km of accessible habitat - low gradient), and the St. Regis River – a tributary to the St. Lawrence River (32 km of accessible habitat – higher gradient). A habitat suitability index (HSI) for lake sturgeon and an index of biotic integrity (IBI) were applied to each river. Released juvenile sturgeon are successfully using both rivers in habitat that is predominantly consistent with the HSI and IBI evaluations. Contrasts in sturgeon habitat use and the HSI and IBI values for these rivers give insights into the status, process, and next steps in the recovery plan for lake sturgeon and the native fish community of Lake Ontario and St. Lawrence River tributaries.

Dawn Dittman (USGS Great Lakes Science Center) – New York Lake Sturgeon Projects [view poster (231 KB pdf)]

Barbara Evans (Lake Superior State University) - Retinal development and light response in larval lake sturgeon [view poster (2.95 MB pdf)]

Description: Little is known about the role of vision during the early development of lake sturgeon. Fertilized lake sturgeon eggs from Black Lake MI were maintained in the laboratory at 13 degrees C and a 15:9 hour light dark cycle. At daily intervals after hatching, larvae were tested for their phototactic response and also sampled for histological examination. The light source was a series of narrow bandwidth light emitting diodes (UV, visible, IR). At hatching, the larvae elicited negative phototaxis; however, the retina was undifferentiated. The pineal organ does appear to be differentiated at time of hatching and likely facilitates the observed response to light. At 5 days post hatch (dph), cone photoreceptors were beginning to differentiate in the central retina, and the larvae appeared less photonegative, instead they froze when the light source was turned on. By 10 dph, both large rods and small cones with oil droplets were present, and the retina showed clear lamination. Coordinated eye movements were observed at 15 dph, but the fish did not respond to moving grating patterns. The retina develops relatively slowly, but once complete has both rods and cones with low numbers of ganglion cells. Histological and behavioral results indicate that the larval lake sturgeon eye is sensitive to low light, but also has low visual acuity. Under natural rearing temperatures, vision is not likely functional prior to 1 week of age, but the light environment is clearly important.

Jeannette Krieger-Kanefsky (Ohio State University) and Paul A. Fuerst (Ohio State University) - Investigation of 18S rRNA gene variant expression in lake sturgeon tissues

Description: Previous studies of the nuclear 18S ribosomal RNA (rRNA) gene of sturgeons discovered intraindividual variation in every species of sturgeon examined (23 species of *Acipenser, Huso*, *Scaphirhynchus* or *Pseudoscaphirhynchus*). This finding (the first in a vertebrate) was highly unusual. We have previously reported that at least 17 sequence variants of 18S rDNA are found in the genome of the lake sturgeon. A process termed concerted evolution ordinarily homogenizes the many copies of the rRNA genes occurring within an individual. Why do sturgeon possess large numbers of 18S rRNA gene sequence variants when very few other species show this characteristic? Possibly, different sequence variants are active in different tissues of the sturgeon. We examined the expression of rRNAs in the liver and found that a single sequence variant is primarily (if not solely) expressed.

To test whether tissue specific expression of variant forms occurs, we amplified and sequenced 18S rDNA sequences from a lake sturgeon, and then reverse-transcribed the 18S rRNA from eight different tissues and sequenced the expressed transcripts to determine if there are differences among variants for the tissues in which they are expressed. The same single sequence variant was found to be expressed among all tissue types.

Heidi Keuler (University of Wisconsin La Crosse) - Growth and condition of lake sturgeon (*Acipenser fulvescens*) in Legend Lake and the Wolf River – Lake Winnebago System of northeastern Wisconsin

Description: Age, growth, and body condition of feral lake sturgeon *(Acipenser fulvescens)* have been studied in numerous waterbodies; however, comparison of growth and body condition of feral sturgeon to stocked fish is lacking. The objective of this study was to determine if there was a significant difference between a feral population of sturgeon in the Lake Winnebago system, and a stocked population in Legend Lake on the Menominee Reservation. Length and weight of sturgeon were measured and approximately 250 pectoral fin rays were collected from sturgeon in both populations. Fin rays were sectioned with a low-speed saw, aged, and length-at-age was back-calculated from annuli. Sturgeon from Legend Lake showed greater growth than the sturgeon from the Lake Winnebago system in years one ($F = 19.12$, $P = 0.0002$), four ($F = 7.92$, $P = 0.0090$), six ($F = 6.62$, $P = 0.0167$), and eleven ($F = 14.53$, $P = 0.0029$). However, the younger lake sturgeon from Legend Lake had slightly poorer growth and condition than sturgeon from Lake Winnebago, while older sturgeon from Legend Lake had superior growth and condition. This may reflect a diet shift or stocking too many fish of certain year classes. Stocking fewer fish in the future may decrease competition and increase growth and condition of lake sturgeon.

Tracy Kolb (Michigan State University), William Taylor (Michigan State University), Doug Beard (USGS Reston) and Andrew Loftus (Loftus Consulting Annapolis) - Developing an Information Infrastructure for North American Sturgeon

In 2004, the Michigan State University Department of Fisheries and Wildlife began working with the U.S. Geological Survey's National Biological Information Infrastructure (NBII) to develop an information framework for North American fisheries and aquatic resources. The objective is to create an information system that can be overlaid with existing watershed databases to aid managers and researchers in assessing landscape effects on aquatic populations.

In order to meet this objective we are creating a data system to assess fisheries status and trends across state boundaries using sturgeon as a pilot species. Sturgeon are an especially appropriate species complex because of their ubiquitous nature and vulnerability to habitat disturbances. The guiding principles of this project include:

- Creating a system that is useful to managers and researchers for a variety of purposes associated with status and trends
- Utilizing the expertise of managers and researchers in the sturgeon community throughout design and development
- Creating a system adaptable enough to incorporate information from multiple existing management programs, as well as new information as it develops

The result will be a dynamic system that can change to meet the emerging needs of researchers and managers.

Scott Koproski (USFWS Alpena), Meghan Kline (Lake Superior State University), Ashley Moerke (Lake Superior State University) and Roger Greil (Lake Superior State University) - Lake sturgeon telemetry study in the St. Marys River, Michigan [view poster (202 KB pdf)]

Habitat loss and fragmentation have been identified as major factors contributing to the decline of lake sturgeon in the Great Lakes. Lake sturgeon currently utilize the St Marys River system, but little is known about the locations and timing of use of habitats by lake sturgeon. The main objective of this study is to identify critical habitat used by lake sturgeon in the St. Marys River by tracking fish implanted with sonic telemetry tags. During the summer of 2006, 75 lake sturgeon were captured using setlines. All of the lake sturgeon that were captured for the first time received an external cinch tag along with an internal PIT tag. All sturgeon were measured and weighed, and a small section of the left pectoral fin ray was removed for aging and genetic purposes. Sonic telemetry tags were implanted in 12 of the lake sturgeon that exceeded 50 inches in length. Tracking began immediately after the first fish was implanted with a sonic tag. Preliminary results illustrate that the tagged lake sturgeon remained mostly throughout the northern channel of Sugar Island during the summer. However, a couple individuals were located along East Neebish Island, demonstrating movements up to five miles within a three day period. Lake sturgeon tracking will continue through 2007 to identify patterns of seasonal movement and habitat use.

Travis Moore (Missouri DOC), Greg Snellen (Western Illinois University), Mark Miller (Western Illinois University), and Dr. Timothy Spier (Western Illinois University) - Lake sturgeon capture methods and habitat use in the lower pooled portion of the Upper Mississippi River, Missouri

Description: The Missouri Department of Conservation has stocked nearly 300,000 fingerling lake sturgeon into the Mississippi and Missouri Rivers since the mid-1980's. Two projects (capture techniques, habitat use) were initiated in 2004 to help answer questions about this developing population.

Capture Techniques: While there are scattered reports of large fish being caught in hoopnets by commercial fishermen, hoopnets are labor intensive and yield smaller total numbers of fish. Trotlines baited with nightcrawlers have proven effective at catching various-sized fish when water temperatures are less than 75 degrees. Gillnets have also proven to be an effective method if placed in locations where fish congregate. Larger meshes yield larger fish. Three-inch bar mesh gillnets captured a wider size range of lake sturgeon than other meshes.

Habitat Use: Radio and ultrasonic telemetry was used to track movements of adult and sub-adult lake sturgeon. Radio transmitters were useful the first year but it was difficult to find fish when they used deeper water habitats. Ultrasonic transmitters have proven more effective with much higher location rates. Tagged fish preferred deep water habitats (20+ feet) with moderate flow. Main channel and channel border habitats, either diked or undiked, have been the most used habitats. There are also seasonal movements that appear to be related to flow rates. Fish moved upstream during high spring flows and into the dam tailwaters in late summer. Fish dispersed throughout the lower half of the pool in winter. While all fish were captured, tagged, and re-released in Pool 24, some fish have relocated to other pools.

Holly Patrick (Purdue University) - Host-size selection and lethality of lake sturgeon on sea lamprey [view poster (556 KB pdf)]

Description: Populations of lake sturgeon *Acipenser fulvescens* remain imperiled in the Great Lakes, despite conservation and restoration efforts. Parasitism by sea lampreys *Petromyzon marinus* may contribute to the failure of sturgeon rehabilitation. The objectives of this research were to examine the short- and long-term growth and survival and rate of wound healing and scar retention of lake sturgeon following a sea lamprey attack. A series of 80 experimental trials each allowed one sea lamprey to feed on one lake sturgeon in the laboratory. Lake sturgeon were from one of four size groups; 400-600 mm fork length (FL), 600-800 mm FL, 800-1,000 mm FL, and 1,000-1,500 mm FL. Each trial was terminated upon sea lamprey detachment or lake sturgeon mortality. Surviving sturgeon were allowed a two-week short-term recovery period to assess survival, and a longer-term recovery period to assess growth and wound healing. Estimated growth rates of lake sturgeon decreased following sea lamprey attack, pronouncedly for the smaller fish. Lake sturgeon mortality was greater for the smaller fish. Sea lamprey marks on lake sturgeon differed from those seen on teleosts with scales, with lampreys attaching most frequently on the axils of the pectoral fins. Results from this study will aid fisheries managers in making appropriate decisions for concurrent sea lamprey control and successful rehabilitation of lake sturgeon populations in the Great Lakes.

Mike Thomas (MDNR Lake St. Clair Research Station) - Does hook size matter?: Evaluation of two hook sizes for survey setlines in the St. Clair River

Since 1996, the Michigan Department of Natural Resources (MDNR) has assessed the status of the lake sturgeon (*Acipenser fulvescens*) population in the lower St. Clair River with setlines. From 1996 through 2004, setlines were constructed and fished using stainless steel size 4 Mustad Kirby Sea Hooks. During this time period, lake sturgeon less than 30 inches total length (TL) were rarely caught. Over time, cohorts that initially appeared weak based on setline catches, appeared in higher numbers in subsequent years. In 2005 and 2006, we investigated the effect of hook size on the catch of lake sturgeon by alternating small and large hooks on each individual setline. The objective of this study was to determine the effect of hook size on the catch of lake sturgeon for assessment setlines in the North Channel of the St. Clair River. Two different sizes of hooks were fished in an alternating pattern on each individual setline. Large hooks were baited with round gobies (*Neogobius melanostomus*) larger than approximately 2.5 inches TL, while small hooks were baited with round gobies less than 3 inches TL. Upon retrieval of the setline, the size of the hook and size of each sturgeon caught was recorded. For fish captured in 2005, ages were estimated from pectoral fin ray sections. The mean TL of lake sturgeon caught on small hooks in 2005 and 2006 was nearly identical, but significantly smaller than the mean TL of lake sturgeon captured on large hooks in both years. Over a two year period, small hooks consistently caught much higher numbers of lake sturgeon under 35 inches TL or 7 years old, compared with larger hooks alternated on the same setlines. Small hooks were much less effective than large hooks for catching lake sturgeon over 40 inches TL or 10 years old. These results suggest that length frequency and age composition data collected by setlines fished with at least two hook sizes are more representative of the sturgeon population. Assessment setline surveys using only one hook size would likely provide a biased sample of lake sturgeon populations, possibly misleading researchers or managers into ineffective management actions. Sampling with setlines incorporating both small and large hooks has improved MDNR efforts to monitor recruitment and investigate juvenile lake sturgeon habitat utilization in the St. Clair River.

Sturgeon Law Enforcement Issues Panel Discussion

Presenters & Panelists: Fred Hnytka (DFO Canada), Greg Drogowski (Michigan DNR), Todd Schaller (Wisconsin DNR), Mike Kitt (Wisconsin DNR), Mary Burnham Curtis (USFWS), Craig Tabor (USFWS), Robert Luke (DFO Canada), and Don Waukechon (Menominee Indian Tribe of Wisconsin)

Moderators: Lloyd Mohr (Ontario MNR) and Tom Pratt (DFO Canada)

A group of eight panelists having various expertise with law enforcement related issues and representing numerous resource agencies provided answers (A) and comments (C) to questions (Q) and comments (C) made by meeting participants. Some of the panelists provided presentations prior to the Panel Discussion. Abstracts for those presentations are provided above under oral presentations for the Lake Sturgeon Legal Issues Section.

Q: Can Todd and Greg comment on the demographics of their respective fisheries**?**

A: (Todd Schaller) From the Lake Winnebago spearing standpoint primarily localized activity, although in the past probably ten years we've seen a few people coming in from outside the area because of a change in licenses that we went through. It used to be a specific sturgeon tag that you purchased that was included in a bundle package of licenses and when that occurred we started to see people from other parts of Wisconsin coming over and participating that had that [type of] tag. But it is primarily local. We do have some non-resident activity most of which comes out of Michigan, Illinois and Minnesota. A lot of our non-residents were probably born and raised in Wisconsin but moved away for college or jobs and are just returning for the social aspect.

A: (Greg Drogowski) In Michigan the illegal take is or was, for a vast majority local. We did have some from other parts of the state and the winter spear fishing season is growing in popularity. I think it started out more local but now is about 50/50 with the non-local aspect growing all of the time.

Q: (Amy Welsh) For the Species at Risk Act what criteria are used for the identification of the designateable units (DU) or how did you determine what a DU is as it is listed in the COSEWIC Listing?

A: (Fred Hnytka) I think COSEWIC based it on genetic analysis. Between last April when they first examined the status report with certain DUs, then went back to the geneticists and asked them to do some sort of analysis to look at the genetic differentiation amongst stocks. To the best of my knowledge it was done on that basis.

A: (Bill Franzin -DFO)There are a combination of factors involved in a DU. COSEWIC has the water types of Canada broken up into aquatic eco-zones which are basically the major watersheds, [which are used] in combination with where the species is located within Canada and where the genetics distinguishes major differences between groups. So with the capabilities that we have, genetics is a big factor.

Q: (Dan Sheill) From time to time agencies like to publicize successes and accomplishments and it is done in the media, like news papers for instance, stating that for the first time in decades we have discovered lake sturgeon spawning in some body of water, and it will have a map showing

where the site is located. From an enforcement stand point, this concerns me. What this is doing is advertising exactly where to go for people that are looking for sturgeon. People that were probably not tuned in that sturgeon were starting to come back in certain areas are now going to go out there and specifically harvest, and we have given them the exact location and have basically said that the numbers are coming back and everything is basically "good to go" [due to the] successes we have made. I know we want to be public relations orientated and make sure the public is aware of our accomplishments. Can I get some feedback from the biologists and the enforcement group if this is something that you are all aware of and if this concerns you?

Q: (Lloyd Mohr) I know the conservation officers in our office have raised the same question. We are in the age of the internet and we are encouraged to share information and data on a daily basis to provide the public with information as to what we are doing. Is this a concern to the law enforcement group that we provide a lot of information or that we are encouraged to provide a lot of information?

A: It is part of the program. Without PR we won't get the support and we won't get funding. The public needs to know what we are doing out there. We know it is necessary and it works together; there are specific instances where we can use the media or public awareness to protect the resources. I think there are also benefits where not only are you making people aware who might be concerned form an illegal harvest but you are also making people aware from a very concerned aspect. So I think both sides are becoming aware of this so you might be telling the bad groups where the fish are but you're also telling that good person that keeps an eye on these fish.

C: (Henry Quinlan) As biologists we often are alerted to an area or location by locals because they often know about these places long before we do. So potential for illegal activity is already there and these articles in news papers are not likely news to those people. Word spreads long before we know, certainly on a local level, but maybe not on a state wide level. It is something I think we all struggle with.

C: (Rob Elliott) Can we provide a few moments for those individuals on the panel that did not speak during the presentation period a few moments to tell a little bit about the work that they do and the jurisdictions that they represent?

C: (Robert Luke) I'm stationed out of or Regional Headquarters out of Winnipeg, MB. The Region I work is called Central and Arctic which includes Alberta, Saskatchewan, Manitoba, Ontario, Nunavut and the Northwest Territories. As a federal fisheries officer we can be assigned to go anywhere in Canada from the 200 limit on the east coast to the 200 mile limit on the west coast and from the North Pole to the border of United States. The position I am in now is working with the new Species at Risk legislation but I'm still a fisheries officer as well as a fish habitat inspector. I work within a number of different regulatory issues and legislation.

Q: (Lloyd Mohr) How much time in the last five years have you spent looking at lake sturgeon?

A: (Robert Luke) The lake sturgeon work that you are working on here is new to me.

C: (Don Walkashaw) I'm a conservation officer from the Menominee Tribe. Most of the sturgeon work is dealing with issuing citations. We started a lake sturgeon reintroduction program in 1994 so our program is fairly new and we are learning about it too.

Q: (Lloyd Mohr) How much time is spent for you and your colleagues working on lake sturgeon?

A: (Don Walkashaw) Probably around 25% of all of our official duties.

C: (Craig Tabor) I'm a special agent with the US Fish and Wildlife Service stationed in Ann Arbor Michigan. I supervise a group of agents and our area is all of Michigan and Ohio. We are pretty thinly spread as has been stated by others. With lake sturgeon not being a Federally listed species the bulk of the on the ground enforcement is being done by the states and provinces. Our opportunity to become involved has mostly to do with interstate and international trade. Anticipating your question, my purpose in being here is primarily to learn more about the species. I am fairly new to the Midwest and the last five or six months have been sort of like taking a drink from a fire hose. We have gotten some case work done in the last couple of years, some by the states and some by the Service, and none of it suggests that there is a significant illegal market for lake sturgeon roe or meat. However, we do realize that the potential for exploitation is certainly there and may increase with the recent ban on Asian and Eurasian Imports.

C: (Lloyd Mohr) I brought the same question to the attention of our law enforcement agents in my office in Ontario and unfortunately they also spend very little time on lake sturgeon unless it is some other problem and it has been brought to their attention, then they will devote time and energy to the problem. I see a lot of contrast here and that some of the very high profile lake and river systems tend to get a lot of coverage and yet the rest of the Great Lakes Systems tend not to. I just wanted to open that up and get peoples thoughts on that. Is there something that we as researches and biologists could be doing better to provide more impetus to your managers to put more emphasis on lake sturgeon, if it is required?

A: (Todd Schaller) The nature of the beast is that it takes a high amount of efforts for often times very little return and we have so many other pressing things. Until somebody brings it to your attention, it is then that you realize it is important. You as fisheries managers, I would think, would have a good relationship with your law enforcement people. If you see problems and trends, let them know and work closely with them because they are, many times, going to have to force themselves to work on this.

A: In the Oshkosh local area when we had a license increase we were able to get the license dollars, the spearing licenses dollars, dedicated specifically to lake sturgeon work on the Lake Winnebago System. So you figure a $20 tag with 8000 tags, you do the math. That really gives us (law enforcement, and Ron Bruch, our lake sturgeon biologist) a tool and the resource that a lot of you don't have access to, allowing us to do some things that other can't. How did we get that rule change made there? It was because of the public involvement. It was not us, it was not the DNR, that went to the legislature. It was the people who support the lake sturgeon spearing in that particular part of the state.

C: (Robert Luke) Just a clarification, I'm not the only one that deals with fisheries. Like our counterparts in the US, there are provincial agency conservation protection officers that have their own provincial legislation where they do work with sturgeon. Some of the Provinces have sport fisheries that catch and release. There is also a limited commercial fisheries that deal with sturgeon. Recently, the new Species at Risk legislation, and the potential listing the Lake Sturgeon as an endangered species, has brought this species forward to the national level. This has brought lake sturgeon into a more public spotlight.

C: (Fred Hnytka) From the SARA (Species at Risk Act) perspective, if sturgeon gets listed by SARA, as with each species, it will get high attention. With high attention comes a lot of resources, and with resources comes greater public attention and greater public education. With my experience with other species, it has probably been one of the most useful parts of SARA.

Q: In Missouri, our largest private fish producer in the state is doing some aquaculture in some private lakes. Years ago he actually came to our agency and volunteered to raise lake sturgeon for our stocking program. It seemed that this individual was trying to determine if he could eventually raise a private stock of lake sturgeon. To my knowledge, there are no private stocks of lake sturgeon out there. My question is, do any of you know of where he was likely to get those fish and if there is a legal network for him to do that in the United States or Canada?

A: (Fred Hnytka) There is only one that I am aware of and that is the Rainy River System. I think the First Nation there raises the lake sturgeon and export them. That is the only source that I know of.

Q: (Brenda Arshambo) My question is about management plans. I know Michigan is reviewing their Lake Sturgeon Rehabilitation Strategy. With regards to that on a local, state and regional level, is there any effort to increase or double the fines for illegal harvest as it relates to caviar supply and demand?

A: (Greg Drogowski) In Michigan, not that I am aware of as far as increasing fines and penalties.

A: (Robert Luke) Under the Species at Risk legislation, the fines in Canada are potentially very heavy with summary conviction up to $300,000 dollars for the first offence for an individual. For corporate (other than non-profit), summary conviction fines are not more than $300,000 dollars.. For an indictable offence, fines can be upwards of a $1,000,000. For those fish that are cut up, every piece can be viewed as a violation. And if you are caught a second time, the fines can be double. The fines are heavy under the Canadian legislation, but again, the legislation is fairly new. With other fish species some of the fines within the last year and a half have ranged from a low of $5,000 to the highest of $80,000 for the possession and the sale of Species at Risk.

A: (Craig Tabor) At the federal level in the US, it will be on a case by case basis and will depend on the severity of the offence and how it is charged. Depending on the offence it could be indictable as a felony and penalties could range widely. There could be civil restitution directed toward the victim state in addition to criminal penalties. If it is a commercial violation, depending on the dollar amount involved, penalty amounts can quickly escalate in the sentencing guidelines that enter into the range where there is mandatory time served. So it depends, but there is the possibility for some quite severe penalties in the US as well.

Q: (Marty Holtgren) As sort of an extension to Brenda's question: Mary, you gave us a couple of examples in your presentation about illegal harvest and non-compliance issues, and you seemed disappointed that some of the fines seemed to be very small. I know many of us in this room have also read about caviar where they gave examples of some pretty severe issues that took place but the fines levied seemed entirely insignificant to what the crime was. You have talked about the fines that are on the books that you could charge and it certainly doesn't seem like those are the fines that are actually levied. How big of an issue do you see this being and what routes can be taken to make sure the fines or the non-compliance issues are taken more seriously?

A: (Mary Burnham Curtis) The fact that the fines are so low probably just reflects that historically it has not seemed important to the states, keeping in mind that the states are primarily responsible for prosecuting. I know there is an ongoing case between Oregon and Washington where they have sixty defendants but have moved through only two or three. And in fact, we are waiting to prosecute once the state finishes and I am not sure what they are going to go after. I do know that at the federal level, like Craig said, the number of fish that are involved forms the penalty. So that is what we are interested in looking at the individual identification because that helps with the prosecution and the issuing of fines. At the individual level, for the individuals that were caught at Sacramento, I think the fines were a paltry sum. This woman was walking around with $1,200 dollars in cash in her pocket and she bought the roe from seven individual female fish with less than $1,200 dollars, and then turned around and sold the roe and probably made $10,000 dollars, and was fined $1,000 dollars. So the monetary fine was insignificant and her jail time was completely reduced. There is really no legal, healthy deterrent. As this starts to become a real problem, they are actually looking at introduction of organized crime. That is when stuff is really going to hit the fan, because the Eastern European organized crime is known to be infiltrating part of this black market and ultimately that is where the real crimes are going to come from.

Q: (Tim Purdy) I have a question for Robert. If the local Ministry of Natural Resources deems that there is a sustainable population of lake sturgeon in Lake Huron where there is currently the small commercial harvest and where we are doing the work with lake sturgeon, if it gets listed as threatened, how can we continue to do our work or is there a way to get them delisted for that area?

A: (Robert Luke) Once it is listed, there is still a process of regulating recovery in the management plan. If that specific area that you are working or have a fish quota in is not the problem area, it can be identified in this recovery strategy saying that this area does not or will not cause any problems with the recovery of this stock. It is possible to say that a certain section of river is not affected. Once it is in that document, then there are no prohibitions against the area. The second part of that is if OMNR managed that fishery as they have previously been licensing it, under the act could they continue to permit it. Again because this legislation is so new and there is no framework or agreements in place, these things still need to be worked out, but there are avenues. If it is determined that the stock is at a state that needs to be recovered, then things could go the other way with the commercial fishery.

Q: (Tim Purdy) OK two things what takes precedence, the federal people or the provincial people?

A: (Robert Luke) Under the Species at Risk Legislation, and as I stated in the presentation, all aquatic species are the responsibility of the Fisheries Minister. So, if lake sturgeon are listed federally, they would be a federal responsibility, but that responsibility can be handed down to the province.

Q: (Tim Purdy) Will the aboriginal fishery be dealt with the same way as the current commercial fishery of Lake Huron?

A: (Robert Luke) I can't say how it is going to be dealt with, but again, when it comes to the specifics, there is going to be consultation. This legislation now is different from most legislation where we now have to consult with the users, stakeholders, aboriginal peoples. For any work

being done with any listed species, we have to consult before any decision is made, and it will go up to the minister to make the decision as to how and what action is to be taken.

A: (Fred Hnytka) As you are aware, there are constitutional issues that relate to First Nations fisheries, and the federal government is obliged to consult with First Nations on fisheries issues. They are also obliged to consult if there is the likelihood of infringement of a treaty right, and those issues are what we need to address during that consultation period. Again this woud indicate that we would need an extended consultation period for the lake sturgeon.

Q: (James Boase) How will these COSEWIC changes affect the ability of researchers to conduct their research in locations like the Detroit and St. Clair rivers that are shared by both the US and Canada?

A: (Fred Hnytka) The answer to that is maybe. As before, there would have to be a permit issued to conduct scientific research for work related to the recovery of a species. At this current point, it would have to be obtained from the Department of Fisheries and Oceans. However, at the same time we are trying to negotiate agreements with the provinces whereby the provinces would be able to issue those permits - but we are not at that point yet.

C: (Don Walkashaw) I work on a federal reservation and work with the US Fish and Wildlife Agents and we turn cases over to them in their office in Milwaukee. It is there that they determine if they will move forward, and it seems to be on a case by case basis. The way that things are going now, they seem to have the attitude that other things are more important. So it is hard to get any convictions going against these individuals.

Q: Do you have a target for recovery and if so how will you know when it is achieved?

A: (Fred Hnytka) We are a little ways from that at this time. Again, remember the species is not yet listed and that will not be determined until 2009 at the earliest. Somewhere between now and then we will be looking at a recovery potential assessment for the species. There may be a number of things that we will be able to do to develop a recovery target.

Q: Do you have tributaries to the St. Lawrence now that have naturally spawning sturgeon?

A: (Fred Hnytka) I actually do not know that.

A: (Lloyd Mohr) The answer to that is yes, there is actually a lot of natural reproduction that comes through the St Lawrence System at this time.

Q: I am asking the question because in New York we have been coordinating with Canadian firms to collect eggs artificially using hormones to induce egg release for stocking purposes. I work with the US Fish and Wildlife Service and we just went through the Joint Status Review for the American Eel on both sides of the river and we had great coordination. I was wondering if we are going to be doing a similar joint effort with lake sturgeon on the Recovery Plan?

A: (Fred Hnytka) I think that would likely be the case. Over the near future I would guess that we would continue to forge those relationships with our American counterparts in terms of developing various recovery plans. Lake sturgeon are found in much of the international waters and because of that, we would solicit help from our American counterparts in any recovery plans..

With some of the other species that I have worked with in the past, the short jaw cisco for instance, we worked closely with the US Fish and Wildlife Service and the USGS for the expertise and other responsible jurisdictions as well.

Q: If lake sturgeon are listed, and given that there are pretty severe penalties for take infractions, do you think that will provide sufficient deterrent to move illegal activity to the US side of the border?

A: (Greg Drogowski) I guess it would depend on how much illegal demand there would be for sturgeon and the price that it would bring. It is going to be so new to Canada to do the enforcement on this. Maybe somewhere down the road, yes, but I can also foresee the regulatory end of this in the US also getting to a point that the more poaching becomes public in the US, the more the public will demand that the fines in the US change.

Q: (Lloyd Mohr) How much illegal lake sturgeon activity do you think there is, and how much of a concern should it in fact be? Remember that most of the US talks this morning were about poaching and illegal fishing activity from a recreational fishing standpoint (for example: fishing without a license or keeping a fish that is undersize), not from an organized crime perspective where that segment of society is targeting caviar for profit. Do you think this is going to be the next big problem?

A: (Craig Tabor) As long as there is a market, there will be a demand, and there will be those that will be willing to exploit it. Past case work has shown that the criminal element, just like many things in nature, will take the path of least resistance. So if the penalties and enforcement are weaker on the US side of the border, and there remains a strong market for caviar and lake sturgeon meat, there will be those that will be willing to take the chance to go out and exploit that resource. So to answer your question, if the restrictions are stronger on the Canadian side then we will likely see exploitation on the US side go up.

A: (Mary Burnham Curtis) It really is the market that drives these things. For example, we have had some of the cheaper replacement products, such as whitefish roe, come through our lab that was dyed with squid ink to try and pass it off as beluga roe. We see much of the caviar come into our lab around Christmas and New Years because that is the time of year when the most demand is. They are doing a really good job in other wildlife industries such as hunting African and Asian wildlife, and getting the word out that this is not a good thing for people to be doing, and the demand if falling off.

Q: (Henry Quinlan) Can you describe the way that you collect samples for analysis?

A: (Mary Burnham Curtis) With the survey that we did back in the 90's, we went to the local grocery stores and collected caviar samples for testing to determine what was being sold on the domestic retail market. For the international import markets, we have agents stationed at the major ports of entry like Miami, New York and Los Angeles. In the late 90's, a lot of black market caviar was being smuggled into those ports. As enforcement with caviar restrictions increased at those ports, we saw a shift and attempts to import in places like Brownsville Texas. For clarification – our Wildlife Inspectors sample imports according to the shipment volume. If it's a large shipment, only a percentage of it is actually sampled. What gets sampled depends on what is declared – more species will likely lead to more sampling. If the Special Agents are involved, we

will likely sample more intensively, and they may sample exports as well as imports. Inspectors will routinely sample about an ounce of caviar, from which we analyze 2 eggs.

Q: (Nancy Auer) In recent professional manuscripts involving research with amphibians, the authors are purposely not disclosing the location and are not depicting maps and are very guarded about where their work is taking place. Do any of you think we should be more guarded about publishing or posting information about the locations of sturgeon populations around the Great Lakes?

A: (Craig Tabor) Similar to the remarks that my counterparts made earlier, public support and the knowledge about what government agencies are doing is important. To answer your question, we should look at these situations on a case by case basis. Related to some of my own experiences that are non-wildlife, the Fish and Wildlife Service also enforces The Archeological Resources Protection Act. In some recent case work that was done in Nevada, a researcher that knew where a pristine archeological site was located kept that a closely guarded secret to protect the site. No one else knew about it. With wildlife such as white sturgeon, like what was commented on earlier, the portion of the population that is interested in exploiting a resource like this often already knows about the locations where the wildlife can be found before we do. But for other species like a certain amphibian, if little is known about the species, then would be smart to not disclose information like where they can be easily found or where they would congregate to breed. I understand that for restoration work that is being done, it is often important for the public to be aware of the project to get their support.

Q: (Tom Pratt) The number of both federal and provincial officers is small relative to the resources that are available in the states. What do you think is the minimal level or enforcement capabilities that are needed to protect this species? In some of your programs you have been able to put 20 to 25 officers out there over a six week time frame. Is that overkill or could you cut that back and still have an effective program? Also explain how the volunteers play into the question as well?

A: (Todd Schaller) It is hard to say at what level you could drop back to and still have an effective program. The reason that we have kept it at the level that we have is because it is a unique resource that we can tap that others can not tap, so that helps us a great deal. We have a high level of enforcement toward sturgeon, however sturgeon isn't the only work that is being done while on patrol. For our program it is a priority for us and we have resources that others don't have.

A: (Robert Luke) During the earlier part of my career, which stretches back over 23 years, I was working with communities up in the arctic. When a violation took place, I would likely never had known about it had it not been for members of the community informing me. You build a trust within a community and the more you do that, the more information and the more proactive work that you can do. When the people that are doing illegal activity know that the people around them are willing to come forward with information, then the amount of illegal activity will go down. It is important that you get into isolated communities on a regular basis, community based management will only work if the public are willing to get involved. So it is important to maintain that trust and engage the public. I think it is key to effective enforcement.

A: (Mike Kitt) It is difficult to say how many officers would be enough. In our case, we have actually scaled back the number of officers that are on the river because the program has been

effective with the volunteer patrols. I suppose at some point if we continued to scale back enforcement, illegal activity would increase.

Q: (Lloyd Mohr) How long has it taken to build these relationships and programs like sturgeon for tomorrow or the patrol programs?

A: (Greg Drogowski) Our program began in 1999 and within just a couple of years we began to see a turnaround and the crimes go down.

A: (Craig Tabor) Many times it depends on the species in question. Is it a species like the grey wolf in Idaho that has been reintroduced but it is universally hated by 95% of the population in the state, or is it a charismatic mega fauna? Depending on which scenario we look at, it is going to take different amounts of time to change people's perception.

A: (Todd Schaller) Lake sturgeon are easy for instance when you can take kids down to a river and they can see fish that are much bigger and older than they are. It is an easy sell to get them and their parents involved. So in places like our area, it is easy to do.

Q: (Tom Pratt) In places like where Mike works, it seems that you are trying to work more closely with anglers rather than with the public. So are you seeing the same kind of turnaround?

A: (Mike Kitt) Once I started working with them, the turnaround in attitudes was fairly quick. With the problem group that I was working on, as soon as we started busting just one or two of them, word traveled very fast because they were such a tight knit group and attitudes changed. This is not to say that we don't still have problems. We do. But not nearly as many as before, and I am sure that it was because we put our presence out there. As the public or community begins to take a stewardship role in these programs, less problems occur.

Q: (Rob Elliott) During regulation changes how often does the enforcement enter into the discussion? For example, on the Menominee River we have a very dedicated group of fisherman, but the fishery is now closed and it is now just catch and release fishing. Are you still going to come up and patrol or will those dedicated people move to somewhere else and now you will have to find a new location where you will have to sit for surveillance of illegal activities.

A: (Mike Kitt) The folks are very dedicated to their sport. Now you will see a lot of the illegal fish returned in hopes of catching a bigger one. Some of these people just like to catch them. I suspect that as we put more pressure on them through enforcement and regulation that you are going to see a shift. They are going to go to other areas in the state where there is a legal fishery because you are going to have a certain fraction of those people that want to take the fish home. I think the pressure is going to shift to different areas. I have talked with my counterparts in Ontario where they can catch one fish per day so if there is a demand in a place like Chicago and some one can catch a fish in Ontario and in a days time be back with the fish in Chicago, get ready because those people are going to be going there.

C: (Lloyd Mohr) Ontario is in the process of changing that. The new regulations would limit the fishing to one fish per year with a mandatory registration of each fish caught.

A: (Mike Kitt) We see a noticeable difference in angler activity between those 70 inch years and 50 inch years. Those people know what is there and they know when they have a realistic chance

of catching a fish, so a lot of them don't come. But we still get a fair amount, probably over 50%, that come because they just enjoy the fishery.

C: We dovetail our research activities with the law folks and Sturgeon for Tomorrow. Last year the sturgeon began spawning two weeks earlier than anticipated and we were able to alert Sturgeon for Tomorrow so that they could get there patrol program started, and we alerted the MDNR law people to get the ball rolling and get the officers out there when the fish were vulnerable. In turn, the law folks have been helpful by letting us researchers know easy access locations to the river and they have actually helped us catch some of the fish we were working with.

C: (Greg Drogowski) Communication between researchers and law folks is critical. The couple of fishery people that I am working closely with have provided valuable information about lake and stream assessments, where stocking is taking place. They come to us with information about regulation changes and we in turn build a relationship by telling them information that is useful for their work.

Q: (Henry Quinlan) I would like to comment about some of the concerns that were stated earlier about sturgeon aquaculture. Are you aware of sturgeon aquaculture taking place or being proposed in your respective areas?

A: I'm from Minnesota and we have some aquaculture taking place with fish that were purchased from the first nation. It is not a big operation but they have been permitted to have them in their facilities.

A: I'm from New Brunswick and we currently have one short nose sturgeon aquaculture program that has been up and running for about six years now and is doing fairly well. There have been a few other attempts with short nose and Atlantic sturgeon.

Q: (James Boase) Mary, has there been any effort to collect genetic information from the fish in this type of aquaculture program so that if they ever escape and become established in the wild, you would know where they came from?

A: (Mary Burnham Curtis) as far as I know, that type of information would come from the officers. I just did a Google search to find out a whole bunch about farmed sturgeon and there is some information out there; for instance Atlantic sturgeon in Florida and the one farm in Ohio. Just like the catfish farms, I think this is all going to fall under the USDA because it is a food product.

C: In my management area I have had requests by individuals to start a sturgeon aquaculture business but because the discharge flowed into an existing system that currently supports lake sturgeon, I was able to deny the permit. These people are not using it for caviar and things like that. I think it is because in our state we are mandated to use fish from private aquiculture facilities. I am just glad that we still have the ability to deny these permits or at least restrict what they are doing.

C: (Mary Burnham Curtis) Creating caviar takes a long time to develop and grow and it is a huge investment. Even though the demand and the market is there, it is likely that most of these aquaculture facilities are there to grow fish for stocking.

C: (Kim Scribner) I am curious why you would deny a permit for aquaculture but you would use aquaculture fish for your own state stocking program. I find that a little strange?

A: Because we do not get to make that decision. The legislation makes that decision.

Q: What percentage of the people that come out for these watch programs are actually from the user group and how many are just ordinary citizens that like the resource but don't actually fish?

A: (Mike Kitt) I can not say for sure but I find a fairly high percentage of the people are from the non-user group. We are in a fairly large metropolitan area and because of this we get a fairly large group of people that don't hunt or fish. They just want to come out and work with the resource.

A: (Greg Drogowski) I think we see the same thing. I would guess the ratio is 50:50.

A: (Brenda Archambo) We do tours and field trips for the local school kids and I think that is what gets the parents out there and interested.

Q: What has been the decision with the Canadian Government with the white sturgeon?

A: (Fred Hnytka) The decision has been made not to list certain populations of the white sturgeon, this is tied with socioeconomic issues. There has been some concern by NGO's with that decision.

The following is a correction by Fred Hnytka for clarification

Following up on a question that was posed to me during the panel review regarding the listing of the white sturgeon under SARA, I would like to offer the following correction and clarification. My response as to whether the white sturgeon was listed was "not", however that response is not entirely correct. Only two of six populations, the Lower Fraser R. and Middle Fraser R. were not listed while the four remaining populations (Kootenay R., Nechako R., Upper Columbia R. and Upper Fraser) were indeed listed as "endangered". The links to the Canada Gazette provide the rationale. Please pass this on to the other workshop attendees.

Basin Oriented Session

1. **Lake Superior Basin**
2. **Lake Michigan Basin**
3. **Lake Huron & Lake Erie Basins**
4. **Lake Ontario Basin & St. Lawrence River**

1) Lake Superior

Introduction:
This meeting served as a Lake Superior Lake Sturgeon Work Group (LSWG) meeting. The LSWG receives guidance from the Lake Superior Technical Committee of the Lake Superior Committee.

Participants:
Henry Quinlan (chair) and Jonathan Pyatskowit (USFWS), Tom Pratt (DFO), Amy Welsh (SUNY-Owsego), Brian Borkholder and Tom Howes (Fond du Lac Band), Nancy Auer (MTU), Mike Friday (OMNR), Seth Moore (Grand Portage Band), and Brian Gunderman (MIDNR).

Major Topics Covered:
Our agenda focused on brief updates and information exchange related to lake sturgeon activities by each organization represented. Specific topics included;

- Update on tasks from the Lake Superior Technical Committee
- Communication/Coordination
    - Updates and activities of participants
- Sampling and population status updates to basin map and tables (since 2002)
- New Initiatives/Research
    - PIT tag data submission and reader distribution
    - Genetic Assignments

Discussion Summary:

<u>Update on tasks from the LSTC</u>
At the August 2006 meeting of the LSTC, Henry reported on the charge from the LSTC to assess the effects of the sea lamprey control program on lake sturgeon reproduction in Lake Superior. Age data from Wisconsin DNR and USFWS in Chequamegon Bay and the Bad River was utilized for the analysis. Our null hypothesis was that there was no difference in year class strength (mean number of fish in a year classes) in years the Bad River was treated with lampricide and in years no treatment occurred. To determine if treatments impacted reproduction/recruitment of lake sturgeon in the Bad River system we examined year class strength based on age interpretation of pectoral fin ray cross sections. Year class strength was the same (7.8 fish per year) in years of treatments and non-treatments. Additionally, age data indicated that there were lake sturgeon produced every year that treatments occurred in the Bad River. The Bad River is not a good case study for assessing the effects of TFM on lake sturgeon reproduction because the stream is always treated late in the year, after young-of-the-year lake sturgeon have passed the critical size of about 100 mm in length. Adequate lake sturgeon age data is not available for other streams, nor for a time frame that allows suitable evaluation of this charge. At this time the work group can't say whether or not the sturgeon treatment protocol has had any effect on sturgeon.

Communication/Coordination

Brian Borkolder and Tom Howes updated the committee on the Fond du Lac Band effort to restore lake sturgeon to the upper St. Louis River through egg stocking. A key change has been made with assistance from Michigan DNR to utilize lake sturgeon from the Sturgeon River, a tributary to Lake Superior. Stocking of within basin strains is consistent with the Lake Sturgeon Rehabilitation Plan for Lake Superior.

Seth Moore informed the LSWG that the Grand Portage Tribe was building a small hatchery to rear native fish including lake sturgeon. They have not yet identified a source of eggs. Grand Portage Tribe established an annual spring lake sturgeon assessment in Pigeon Bay using 10" mesh gill nets.

Mike Friday provided a handout on activities in the Kaministiquia River, Ontario. Mike is leading a multi-year study with Ontario Power to examine sturgeon spawning migrations and reproductive success during controlled flow conditions over historical spawning habitat. Minimum flows necessary for migration and larval drift have been documented at about 23 and 17 $m^3 \cdot s^{-1,}$ respectively.

Henry Quinlan informed the LSWG of a cooperative effort among his office (USFWS) the Keweenaw Bay Band, Michigan DNR, and Great Lakes Indian Fish and Wildlife Commission. They have modified the Canadian fall walleye index netting (FWIN) protocol to monitor juvenile lake sturgeon in Lake Superior near the mouth of the Ontonagon River, Michigan. Field crews captured about 40 fish in 2005.

Nancy Auer informed the committee of plans to establish a streamside rearing facility in the Ontonagon River. The project is a collaborative effort between Michigan DNR and Michigan Technological University.

Population status updates to basin map and tables (since 2002)

Topic not covered at this meeting

New Initiatives/Research

PIT Tag Assessment – The USFWS purchased PIT tag equipment with funds from the Great Lakes Fishery Trust and distributed it to individuals/organizations present at the meeting. In all, 20 agencies in Lake Superior will receive PIT tag equipment to help establish a standardized assessment process for lake sturgeon rehabilitation in Lake Superior. Henry described the process of submitting PIT tag numbers to the USFWS Alpena office for entry into the Great Lakes Tag Identification Database housed on the Great Lakes Fishery Commission web site.

Genetic Assignments of At-Large Sturgeon - Amy Welsh updated the LSWG on a project to assign lake sturgeon captured in the open waters of Lake Superior to their stream of origin. Amy is using genetic data from spawning populations (determined from tissue samples provided by many agencies) as a baseline to make assignments and explore movement of lake sturgeon. She evaluated data from 18 streams and grouped data from spawning streams that were indistinguishable. Thus far her work has shown that assignment test can be made with >80% likelihood.

2) Lake Michigan Basin

Introduction:
The discussion was started with introductions by participants including a brief description of their affiliation and suggestions of topics to cover during this group discussion.

Participants:
Rob Elliott (USFWS), Marty Holtgren (LRBOI), Rick Loeffler (North American Hydro, inc.), Kevin Mann (Michigan Technological University), Stephanie Ogren (LRBOI), Jeremy Pyatskowit (MITW), Aaron Paquet (Northern Environmental).

Major Topics Covered:
Because the group was small, most of the discussion time focused on topics of common interest and involvement by the participants such as habitat and fish passage work

- Updates to population status and to basin map and tables
- Habitat Rehabilitation work by participants
- Fish passage activities and opportunities
- Lake Michigan Rehabilitation Plan
- PIT tag data submission and reader distribution

Discussion Summary:

<u>Updates to population status and to basin map and tables</u>
Recent observations and collections by MDNR (Kregg Smith) indicate more consistent presence of adults, juveniles and larvae in the Kalamazoo and Grand Rivers, and greater abundance of young sturgeon in the Muskegon River, all suggesting recent and improved spawning success in those systems. Updated population estimates are available for the Menominee River and the wolf River (from WDNR) and updated spawning run estimates are available for the Manistee River (CMU). Doug Cox's name should be replaced with Jermy Pyatskowit as a contact from the MITW for the upper Wolf River. It was relayed that use of the status term "Remnant" might not be appropriate for some river segments where historic abundance may not have been much higher than current numbers due to limited size and habitat availability (eg. upper sections of the Menominee River).

<u>Habitat Rehabilitation work by participants</u>
There was a good bit of discussion and exchange by participants from the Little River Band of Ottawa Indians, Northern Environmental, and the Menominee Indian Tribe of Wisconsin regarding similar habitat rehabilitation, bank stabilization, habitat inventory, and habitat use studies that each are involved with. Kevin Mann described the telemetry study ongoing in the Manistee River that has involved the tracking of both wild and streamside reared wild fish for determining habitat use. Battery life for the small transmitters has been improved from 1 mo. to 2-3 months. The topic of habitat rehabilitation was also discussed relative to needs for the Lake Michigan Rehabilitation Plan (see section below).

<u>Fish passage activities and opportunities</u>
Participants from North American Hydro, Inc., the Menominee Indian Tribe, and the USFWS discussed the opportunities for field testing upstream fish passage devices for sturgeon. There are interests in providing sturgeon passage at several barriers around the Lake Michigan basin including on the Menominee, Cedar (at a potential new lamprey barrier), Manistique, Boardman, and Milwaukee

rivers. It is likely that research funds would be available for field testing the spiral design fishway if a suitable location for testing can be identified. It was noted that the Shawano Dam on the Wolf River would be a good candidate because of the number of fish present during the spawning run. If successful where fish are abundant, the structure could then be moved and used elsewhere with greater confidence of success. North American Hydro is the owner of the Shawano Facility and is interested in being able to identify successful passage devises for facilities they own on other rivers around the Great Lakes. The Menominee Tribe is also interested in developing plans for passage of lake sturgeon at the Shawano facility and will continue to discuss this with WDNR.

Lake Michigan Rehabilitation Plan

The Lake Michigan Lake Sturgeon Task Group is continuing to work on elements of a basin-wide Rehabilitation Plan for lake sturgeon in Lake Michigan. Participants discussed the development of specific objectives and strategies for individual river systems. For example, there is need and intent to complete habitat restoration on the Manistee River over the next 20 years so that there will be adequate spawning habitat to support increased reproduction when current year classes of sturgeon (enhanced through streamside rearing) returns to spawn. Other similar examples include the Milwaukee River, where dam removal and/or passage will be important for providing access to spawning habitat for sturgeon that are now being introduced into that river through the use of streamside rearing. The need to complete inventories of existing habitat in present and potential sturgeon rivers was also discussed.

PIT tag data submission and reader distribution

Participants were reminded to submit their PIT tag data for inclusion in the Great Lakes Lake Sturgeon Tag ID database. Another supply of PIT tag readers were recently purchased through a grant from the Great lakes Fishery Trust and were being distributed to agencies that had indicated a need. If anyone has need for the temporary loan of a reader, contact Rob Elliott, USFWS.

3) Lake Huron/Erie Basin

Introduction:
The discussion was started with introductions by participants including a brief description of lake sturgeon work during the previous year and suggestions of topics to cover during this group discussion.

Participants:
James Boase (USFWS), Lloyd Mohr (OMNR), Marty Holtgren (LRBOI), Ed Baker (MDNR), and Terry Morse (USFWS)

Major Topics Covered:
Because the group was small and no representatives were from the Lake Erie Basin, most of the discussion time focused on topics of common interest for the Lake Huron Basin including:

- Developing a Lake Sturgeon Recovery Plan for Lake Huron
- Updating the population status tables and the basin map
- Survey and habitat rehabilitation work
- PIT tag data submission and reader distribution

Discussion Summary:

<u>Lake Sturgeon Recovery Plan for Lake Huron</u>
Ed Baker (MDNR) and Marty Holtgren (LRBOI) both agreed to participate in the development of a Lake Sturgeon Recovery Plan for Lake Huron. With John Weisser retiring Terry Morse agreed to appoint a replacement from the Sea Lamprey Control Program, likely Sheryl Kaye for the Service and Paul Sullivan from DFO. Suggestions were made to wait on the Lake Michigan Lake Sturgeon Task Group and see how their Lake Sturgeon Recovery Plan was developing, but because it has not been moving forward recently our group should continue to push ahead and develop one for the Lake Huron Basin. An outline would be presented to the Lake Huron Technical Committee possibly by the 2007 summer meeting or certainly by the 2007 winter meeting. Also discussed was the need to complete habitat inventories of all of the river systems that currently or historically supported spawning lake sturgeon and to create a system that allows managers and researchers to rank the systems.

<u>Updates to population status and to basin map/tables</u>
Recent work conducted in the Mississagi River, Spanish River, Nottawasaga River, and Saginaw River, indicate that updates need to be made for the population status and to the basin maps/tables. Efforts to update the maps/tables would be beneficial in developing a Lake Sturgeon Recovery Plan. Some syntax questions arose as to defining what a remnant stock is and if occasional sighting by fishers constitutes a remnant stock. Questions were also discussed about how to define when a population is considered extirpated and what are the lowest acceptable levels of a viable population.

<u>Survey and habitat rehabilitation work by participants</u>
Survey work is ongoing on the Black River, Saginaw River, Maumee River in the U.S. and the Mississagi River, Spanish River, and Nottawasaga River in Canada. Post assessment work is in its third season for the rehabilitation work that took place at Belle Isle and the construction of lake sturgeon Reefs. Similar reefs are being proposed for other locations in the Huron Erie Corridor, likely near Fighting Island in the Detroit River.

PIT tag data submission and reader distribution

Participants were reminded to submit their PIT tag data for inclusion in the Great Lakes Lake Sturgeon Tag ID database. Another supply of PIT tag readers were recently purchased through a grant from the Great lakes Fishery Trust with most being distributed to agencies that had indicated a need. As future cooperation with commercial fishers and tribal groups develop more readers will be needed.

4) Lake Ontario Basin / St. Lawrence River

Introduction:
The discussion included a brief description of lake sturgeon work during the previous year

Participants:
Dawn Dittman and Betsy Trometer, with input from Doug Carlson

Major Topics Covered:
Because there were no representatives from the Province of Ontario and the St. Lawrence River, the discussion focused on activities in the NY waters of Lake Ontario including:
- Updates to the basin map and tables
- Niagara River studies
- Genesee River studies

Discussion Summary:

Updates to population status and basin map/tables
Updates were provided by everyone present.

Niagara River Studies/Issues
Egg and larval lake sturgeon surveys were conducted in 2005 and 2006. No eggs or larval fish were collected. Betsy plans to try drift nets in spring of 2007. There is a need to map substrates in the Niagara Bar which appears to be heavily used by sturgeon all year round. Other issues include spawning habitat identification and needs and better knowledge of the upper Niagara River population.

Genesee River Studies
EPA funded project was completed in September 2006. Monitoring of the stocked lake sturgeon will continue for the near future.

Meeting Evaluation

An evaluation form was distributed to all participants in their registration packet and participants were asked to turn it in upon departure from the meeting. Time was allotted at the end of the meeting to fill out and return the form. Fifty-four evaluation forms were returned. Below are summaries of the responses to the three open ended questions and to the specific questions which participants were asked to rank from strongly agree to strongly disagree. There were also suggestions that will be useful in preparing for and improving future meetings, those suggestions are paraphrased at the end.

Question 1. What aspects of this meeting did you find most useful?

Overall, participants indicated the meeting was beneficial to them. Many of the comments indicated that the meeting was well planned and organized, that presenters did a great job, and that the topics addressed dealt with issues pertinent to their work. The most common response (19) was the benefit of a diverse overview of sturgeon research and management. Presentations and discussions were deemed useful by 17 and 16 meeting participants respectively. Other useful items included networking (12), law enforcement topics (5), and the venue (3).

Question 2. What aspects did you find least useful?

The list of least useful aspects was lead by panel discussions with 5 responses, followed by law enforcement issues (4). Other items listed as least useful included timing/scheduling, venue, handed out information, posters, and a narrow geographical view.

Question 3. Would you like similar Sturgeon Coordination Meetings to be held in the future?

Yes (53)
No (0)
No Comment (1)

The 2006 Great Lakes Lake Sturgeon Coordination Meeting:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Comment	Total
1. Provided me an opportunity to foster professional contacts.	35	18	1	0	0	0	54
2. Provided me an opportunity to learn about current research projects.	40	13	1	0	0	0	54
3. Provided me an opportunity to get an update on current management activities.	23	25	6	0	0	0	54
4. Did you have an opportunity to provide information to other attendees either through presentations, facilitation discussions, or conversations?	23	26	4	1	0	0	54
5. The lake basin oriented breakout group was helpful and provided new information that will be useful to the work that I do.	3	6	14	0	2	29	54
6. The evening poster/display session and social was enjoyable and worthwhile.	32	16	3	2	0	1	54

The months which attendees at this meeting could participate in future Coordination Meetings are:

January – 8 February – 7 March – 5 June – 17 July – 2 August – 2 October – 3

November – 35 December – 29 No Preference – 6

Other Evaluation Form Suggestions/Comments

- A need to move presentations away from the Lake Michigan and Black Lake populations.
- Need a greater concern for fish passage.
- Well coordinated meeting that remained on schedule.
- Hope the meeting continues on a biennial basis.
- This venue was much nicer than ones in previous years.
- The meeting should be held in a non-smoking facility.
- A casino is not the best choice to hold a professional meeting.
- Conference room seating arrangement was not favorable.
- No clean cups were available during the afternoon session.
- More time for questions would be helpful.
- Longer breaks would give more time for networking.
- It would be nice to be given the packet information before the meeting so that it can be looked over.
- Handout on the talks at the time of the presentations would be helpful.
- Burned CDs of the presentations would be great reference tools.
- Early notice of an upcoming meeting would be nice to help with budgeting for travel.
- Invite speakers from throughout the country and world to increase scope of knowledge.
- Would like to see a new city location each year the meeting is held.
- Kudos to the steering committee.
- All topics were valuable.
- Thanks for putting this together.

Acknowledgements

The U. S. Fish and Wildlife Service steering committee members express our gratitude to other steering committee members Dr. Nancy Auer, Dr. Ed Baker, Dr. Dawn Dittman, Brad Eggold, Dr. Tim Haxton, Marty Holtgren, Lloyd Mohr, and Tom Pratt, for their advice and assistance in organizing and convening this meeting and for serving as moderators during the question and answer periods of the meeting. We thank Jonathan Pyatskowit and Clarice Beckner for their contribution to this meeting which included meeting material preparation, motel and meeting room arrangements, coordination with presenters, and operation of presentation equipment. We thank Fred Hnytka, Greg Drogowski, Todd Schaller, Mike Kitt, and Mary Burnham Curtis who contributed presentations on specific topics by request, along with Craig Tabor, Robert Luke, and Don Waukechon for sharing their expertise as presenters and as panelists for the lake sturgeon law issues discussions. A special thanks to Brenda Archambo and Dona Crist of Sturgeon for Tomorrow, Black Lake Chapter for the numbered and signed, matted sturgeon photograph, shirts, mugs, and sturgeon lapel pins that were donated for door prizes. We express our appreciation to Chris Pullen and Larry Hildebrand from Golder Associates Ltd. for their financial contribution towards the evening social. We also thank the Great Lakes Fishery Trust for recognition of the need for regular coordination meetings, and for provision of the necessary financial support to make them possible.

Participant List and Biographical Information

NAME: Brenda Archambo AFFILIATION: Sturgeon For Tomorrow

ADDRESS: 1604 N. Black River Road, Cheboygan, MI 49721
TEL: 231-625-2776 E-mail: archambogb@hughes.net
Website: www.sturgeonfortomorrow.org
Biographical Sketch: Brenda Archambo is the founder of the Black Lake Chapter of Sturgeon For Tomorrow (SFT), a grass roots non-profit corporation. Brenda successfully argued for allowing a minimal harvest of lake sturgeon from the Black Lake population. She and SFT members convinced state fisheries managers that the cultural importance of sturgeon spearing could be used to promote efforts to recover sustainable populations of this majestic fish. Brenda was influential in developing and organizing a harvest tag lottery for sturgeon spearing season on Black Lake.
Archambo has logged thousands of volunteer hours conducting scientific research, coordinating a volunteer Sturgeon Guarding Program, created a Sturgeon Advisory Council, facilitates presentations, tours and field trips to view spawning sturgeon and organizes fundraising initiatives to support research, conservation and education programming.

NAME: Gil Archambo AFFILIATION: Sturgeon For Tomorrow

ADDRESS: 1604 N. Black River Road, Cheboygan, MI 49721
TEL: 231-625-2776 E-mail: archambogb@hughes.net
Website: www.sturgeonfortomorrow.org
Biographical Sketch:

NAME: Nancy A. Auer AFFILIATION: Michigan Technological University

ADDRESS: Dept. Biol. Scis. – Mich. Tech. University, 1400 Townsend Drive – Houghton, MI 49931
TEL: 906 487-2353 FAX: 906-487-3167 E-mail: naauer@mtu.edu
Biographical Sketch: Nancy is working with Marty Holtgren, Fish Biologist for the Little River Band of Ottawa Indians on juvenile sturgeon movements and habitat identification in the Manistee River Michigan, 2002-2008. She and Ed Baker, Michigan Department of Natural Resources, were co-investigators on the 2002-2005 project "Rapid assessment of lake sturgeon spawning stocks using instream hydroacoustic technology" funded by the Great Lakes Fishery Trust. They also worked together on a portion of the USFWS directed 'Lake Michigan lake sturgeon assessment' GLFT project 2002-2005.

Nancy has had 20 years of experience working with lake sturgeon in Michigan and was chair of the Lake Superior subcommittee on Lake Sturgeon working to produce the GLFC Lake Sturgeon Rehabilitation Plan published in 2003. She continues her Great Lakes work with larval fishes in lake Superior and also several Diporeia studies. She does consulting and workshops on larval fish identification.

NAME: Cameron Barth AFFILIATION: University of Manitoba, Manitoba, Canada

ADDRESS: Department of Zoology, Z320 Duff Roblin Building, University of Manitoba, Winnipeg, MB, R3T 2N2 Canada
TEL: (204) 474-7496 E-mail: umbarth0@cc.umanitoba.ca
Biographical Sketch: I have been at the University of Manitoba for one year, conducting research into ecology and habitat use by juvenile lake sturgeon. I am co-supervised by Dr. Stephan Peake (UNB) and Dr. Gary Anderson (UManitoba). Prior to starting my PhD, I worked for several years for North/South Consultants in Winnipeg, and conducted many studies on lake sturgeon ecology and movements. My MSc was completed at the Natural Resources Institute at the University of Manitoba, where I also completed my undergraduate work.

NAME: John M. Bauman AFFILIATION: Little River Band of Ottawa Indians

ADDRESS: 375 River St. Manistee, MI 49660
TEL: Desk: (231) 398-2198 Cell: (231) 690-7396 FAX: (231) 723-8873 E-mail: jbauman@lrboi.com

Biographical Sketch: Graduated from Lake Superior State University in Sault Ste. Marie, Michigan with a Bachelor's of Science in Fisheries and Wildlife Management. I am currently employed by the Little River Band of Ottawa Indians as an Aquatic Researcher and have been involved with Great Lakes Lake Sturgeon research with various agencies since 2002.

NAME: James C. Boase AFFILIATION: U.S. Fish and Wildlife Service – Alpena NFWCO
ADDRESS: USFWS, Waterford Fisheries Station, 7806 Gale Rd. Waterford, MI 48327
TEL: (248) 894-7594 FAX: (248) 666-9157 E-mail: james_boase@fws.gov
Biographical Sketch: I have been a Great Lakes Fishery Biologist with the USFWS since 2002 and have worked with lake sturgeon for 9 years. I serve as chair of the Lake Huron Lake Sturgeon Task Group of the Lake Huron Committee, serve on the USFWS Great Lakes basin lake sturgeon committee, and lead the Service's lake sturgeon work on Lake Huron and Lake Erie. I am the co-project manager for the recent GLFT funded project, Lake sturgeon response to the construction of an artificial reef in the Detroit River as Belle Isle, 2002-2005, and have been project manager or co-project manager on 6 lake sturgeon projects including: Using GIS to determine habitat use and movement patterns of adult lake sturgeon spawning in the North Channel of the St. Clair River, Movement patterns and habitat use of lake sturgeon spawning in the upper St. Clair River, Movement patterns and habitat use by juvenile lake sturgeon in the St. Clair River, Lake sturgeon use and habitat availability on the Maumee River (OH), Lake sturgeon use and habitat availability in the Saginaw River Watershed, Assessment of remnant lake sturgeon populations in Lower Detroit River.

NAME: Mary Bohling AFFILIATION: Michigan Sea Grant
ADDRESS: 640 Temple, 6th Floor, Detroit, MI, 48201
TEL: 313.410.9431 FAX: 313.833.3298 E-mail: bohling@msu.edu
Biographical Sketch: Project partner for the Detroit River Sturgeon Spawning Habitat Project
-Support the Lake St. Clair Sturgeon Research Project conducted by Jim Boase of the US FWS
-Part of the team investigating potential future site for sturgeon spawning habitat construction in the Detroit River International Wildlife Refuge

NAME: Richard Bonner AFFILIATION: Michigan Department of Natural Resources
ADDRESS: 970 Emerson Rd. Traverse City, Michigan 49686
TEL: (231)922-5280 FAX: (231)922-1853 E-mail: bonnerd@michigan.gov
Biographical Sketch: Commercial Fish Specialist with the Michigan Department of Natural Resources Commercial Fish Enforcement Unit.

NAME: Brian Borkholder AFFILIATION: Fond du Lac Band of Lake Superior Chippewa
ADDRESS: Resource Management Dev. 1720 Big Lake Rd. Cloquet, MN 55720
TEL: 218-878-8004 FAX: 218-879-4854 E-mail: brianborkholder@fdlrez.com
Biographical Sketch: The band has been working on re-establishing a lake sturgeon population to the Fond du Lac Reservation. To date, efforts have been limited to stocking of fry obtained from Wisconsin and Michigan. However, the Band is planning on setting up a streamside hatchery in the future.

NAME: Tom Burri AFFILIATION: Minnesota DNR
ADDRESS: 392 Highway 11 East International Falls, MN 56649
TEL: 218 286-5222 E-mail: Tom.Burri@dnr.state.mn.us
Biographical Sketch: I work with lake sturgeon in Northern Minnesota

NAME: Doug Carlson AFFILIATION: NYSDEC
ADDRESS: 317 Washington St, Watertown, NY 13601
TEL: 315-785-2262 FAX: 315-785-2242 E-mail: dmcarlso@gw.dec.state.ny.us
Biographical Sketch: The efforts to restore sturgeon to waters of New York are coordinated through my position as the Endangered Fish Project Coordinator. Many individuals in several organizations are responsible for our progress, including several in DEC (the Oneida Fish Hatchery, Region 6 Fisheries Management Unit, Lake Ontario Unit), SUNY ESF (graduate student projects), Cornell U., FWS in Amherst, and USGS in

Cortland. The first 10 years of recovery efforts are almost completed, and we started working on a second set of objectives in 2005.

NAME: Dave Caroffino AFFILIATION: Purdue University
ADDRESS: Department of Fors. and Nat. Resources 715 W. State St. West Lafayette, IN 47907
TEL: 989- 600- 2583 E-mail: dcaroffi@purdue.edu
Biographical Sketch: Dave is a Ph.D. student at Purdue University who is studying early-life stages of lake sturgeon in the Peshtigo River, WI. The goal of this research is to identify and quantify sources of mortality that act upon the egg, larval, and age-0 juvenile life stages. This work includes the examination of two year classes (2006 and 2007) and is currently scheduled to be completed in late 2008.

NAME: Jesse Comben AFFILIATION: LSSU
ADDRESS: 3350 Oslund Rd. Bellaire, MI 49615
Tel: 231-533-8301 Email: jncomben@lssu.edu
Biographical Sketch: Sohpmore Fisheries and Wildlife Management Senior Thesis; Genetics on redside dace in the Ottawa National Forest

NAME: Randy Cottrell AFFILIATION: USFWS Office of Law Enforcement
ADDRESS: 405 N. French Rd. Suite 120B Amherst, NY 14228
TEL: 716 691-3635 Fax: 716 691-3990 E-mail: randy_cottrell@fws.gov
Biographical Sketch: I have facilitated Law Enforcement efforts with respect to the import of Lake Sturgeon from Canada into the US, and have documented violations of International (CITES) provisional and state law. Furthermore, I anticipate initiating investigations involving the unlawful interstate and foreign commerce of Lake Sturgeon, including within the caviar trade.

NAME: James Crossman AFFILIATION: Department of Fisheries and Wildlife, MSU
ADDRESS: 13 Natural Resources Building, East Lansing, Michigan, 48824
TELEPHONE: 1-517-432-4935 FAX: 1-517-432-1699 E-mail: james.crossman@gmail.com
Biographical Sketch: James Crossman is a 2nd year PhD candidate in the Molecular Ecology Lab located in the department of Fisheries and Wildlife at MSU. He has finished two field seasons on the Black Lake system and is beginning to analyze data collected over consecutive sampling years. His overall objective is to improve lake sturgeon stocking strategies currently employed around the Great Lakes. More specifically this involves assessing the genetic diversity of various lake sturgeon collection methods, identifying differences between rearing lake sturgeon in their natal water versus at a traditional state hatchery, and determining the most appropriate age to stock juvenile lake sturgeon. For more information feel free to contact James at crossm11@msu.edu.

NAME: Dr. Mary Burnham Curtis AFFILIATION: USFWS Forensic Laboratory: Senior Forensic Scientist - Genetics
ADDRESS: USFWS Forensic Laboratory 1490 EAST MAIN ASHLAND, OR 97501
TEL: (541)482-4191 FAX: (541)482-4989 E-mail: mary_curtis@fws.gov
Biographical Sketch: I work in the Genetics Section at the USFWS National Forensics Laboratory where we research the development of new DNA methods for wildlife species and individual identification as well as population assignment. We have applied the use of mitochondrial DNA sequence variation for the identification of the species origin of sturgeon caviars in trade, and for determining the river origin of White sturgeon. We are using nuclear STR markers for matching caviar back to individual female sturgeon. We are also investigating the utility of nuclear DNA markers to identify caviars of hybrid origin. My work includes providing testimony as an expert witness in federal, state, and local courts in matters involving wildlife genetics. I also conduct research into new genetic methods for wildlife species identification, and application of genetic markers for use in wildlife forensic analyses.

NAME: Dan Daugherty AFFILIATION: Purdue University
ADDRESS: Department of Forestry and Nat. Res. 195 Marsteller St. W. Lafayette, IN 47907

TEL: 765-494-3604 FAX: 765-496-6266 E-mail: ddaugher@purdue.edu
Biographical Sketch: Evaluation of remnant stock status, early life history dynamics, habitat availability and quality, and population viability of Great Lakes lake sturgeon populations.

NAME: LT. Dave Davis AFFILIATION: MDNR Law Division
ADDRESS: 8717 N Roscommon Rd. Roscommon, MI 48653
TEL: 989 275-5151 EXT. 2070 FAX: 989 275-5167 E-mail: davisdm1@michigan.gov
Biographical Sketch: Supervisor of the MDNR Law Division's Wildlife Resource Protection Section. We are responsible for the enforcement of laws and rules relating to the commercialization of fish and wildlife in the State. Our Section is broken down into two Units, the Special Investigations Unit (SIU) and the Commercial Fish Enforcement Unit (CFEU). The SIU is responsible for investigating complaints involving the illegal trade in the Michigan's Fish and Game. The CFEU is responsible for policing the commercial fishing activity in the Great Lakes. This involves tribal and state licensed commercial fishers, wholesale fish dealers, and the bait industry. We currently have one Sgt. and 4 detectives assigned to the SIU. The CFEU has a compliment of one Sgt. and 6 Commercial Fish Specialists. The Specialists and their patrol boats are stationed at various locations throughout the state (Bay City, Leeland, Rogers City, Charlevoix, and Escanaba).

NAME: Caroline Deary AFFILIATION: Anishinabek/Ontario Fisheries Resource Centre
ADDRESS: 755 Wallace Rd., Unit #5 North Bay, ON P1B 8G4
TEL: 705-472-7888 FAX: 705-472-6333 E-mail: cdeary@aofrc.org
Biographical Sketch: As a "Centre of Excellence" for fisheries assessment and management, the A/OFRC employs standardized assessment tools, innovative science and technology and traditional knowledge to evaluate stock status and stresses on fish populations and their habitats. The Centre's studies integrate western science and traditional ecological knowledge (TEK), and lead to recommendations to management authorities. As a partnership between the Union of Ontario Indians and Ontario, the Anishinabek/Ontario Fisheries Resource Centre is well positioned to undertake many different fisheries projects.

NAME: Leah Dehldtrom AFFILIATION: Michigan Technological University
ADDRESS: MTU Biological Sciences Dept. Dow Environmental Sciences Building Houghton, MI
Tel: 920-238-5536 Email: lsdohlst@mtu.edu
Biographical Sketch:

NAME: June M. DeWeese AFFILIATION: U.S. Fish and Wildlife Service
ADDRESS: 3817 Luker Rd Cortland, NY 13045
TEL: (607) 753-9334 FAX: (607) 753-9699 E-mail: June_Deweese@fws.gov
Biographical Sketch: June DeWeese is the Project Manager of the Fish Enhancement, Mitigation, and Research Fund (FEMRF). This fund was established by a Management Agreement executed between the New York Power Authority, the U.S. Fish and Wildlife Service, and the National Fish and Wildlife Foundation (acting as trustee) subsequent to the FERC relicensing Settlement Agreement for the FDR/St Lawrence Power Facility. The FEMRF is targeting the recovery of native fish species in the St. Lawrence River and northeast Lake Ontario. Because they will benefit multiple fish communities, five species of fish are being considered for recovery priority: the Lake Sturgeon, northern pike, muskellunge, walleye, and American eel. The FEMRF Project Manager chairs a Fisheries Advisory Committee which reviews actions proposed for funding and advises the FWS relative to the merits of implementing the proposals. For more information about the FEMRF, please go to http://www.fws.gov/northeast/nyfo/fwc/femrf.htm

NAME: Dawn E. Dittman AFFILIATION: USGS, Great Lakes Science Center
ADDRESS: Tunison Laboratory of Aquatic Science 3075 Gracie Rd, Cortland , NY 13045
TEL: 607-753-9319 x 23 FAX: 607-753-0259 E-mail: ddittman@usgs.gov
Biographical Sketch: I have long been interested in lake sturgeon because of visiting them every year at the Shawano WI paper mill dam. I am primarily working on assessment of lake sturgeon habitat distribution and quality and assessment of use of habitat by stocked sturgeon. The lake sturgeon restoration project of the New

York State Department of Environmental Conservation is in the 2nd 10 years with many goals for continuing improvement of the status of lake sturgeon in historic Lake Ontario and St. Lawrence River waters.

NAME: Andrea Drauch AFFILIATION: University of California Davis
ADDRESS: 2403 Meyer Hall, Dept of Animal Science, University of California, Davis, CA 95616
TEL: (530) 752-6351 FAX: (530) 752-6351 E-mail: amdrauch@ucdavis.edu
Biographical Sketch: I am currently a graduate student at the University of California Davis working on white sturgeon conservation genetics. I recently completed a Masters degree at Purdue University, where I worked on lake sturgeon population genetics with a primary focus on the genetic concerns surrounding lake sturgeon reintroduction programs. I am broadly interested in sturgeon conservation, and have a primary interest in the applying genetic tools to improve the management of these and other long-lived species.

NAME: Sgt. Greg Drogowski AFFILIATION: Michigan DNR Law Enforcement Division
ADDRESS: 1732 M-32 West, Gaylord, MI 49735
TEL: (989) 732-3541 FAX: (989) 732-0794 E-mail: Drogowsg@michigan.gov
Biographical Sketch: Since 2000, involved with lake sturgeon protection efforts on the Inland Waterway Black, Burt and Mullett Lakes and associated rivers in the northern tip of Michigan's Lower Peninsula. Area law supervisor for this area and responsible for coordinating sturgeon protection efforts with the volunteer citizen group, Sturgeon For Tomorrow and coordination of Conservation Officer law enforcement assignments, patrols, investigations, etc.

NAME: Robert F. Elliott AFFILIATION: U.S. Fish and Wildlife Service – Green Bay FRO
ADDRESS: 2661 Scott Tower Drive, New Franken, WI 54229-9565
TEL: 920-866-1762 FAX: 920-866-1710 E-mail: robert_elliott@fws.gov
Biographical Sketch: I have been a Great lakes Fishery Biologist with the USFWS since 1993 and have worked with lake sturgeon for 11 years. I serve as chair of the Lake Michigan Lake Sturgeon Task Group of the Lake Michigan Committee, serve on the USFWS Great Lakes basin lake sturgeon committee, and lead the Service's lake sturgeon work on Lake Michigan. Through this work, I have assisted with the development of guidelines for the genetic conservation and stocking of lake sturgeon in Lake Michigan and in the Great Lakes and have produced the last 2 lake sturgeon status reports for the State of the Lake reports for Lake Michigan. I am the project manager for the current GLFT funded Status Assessment of remnant lake sturgeon populations in Lake Michigan project, 2002-2006, and am or have been a co-investigator for 6 other GLFT funded lake sturgeon projects: Characterization of early life history stages in the Peshtigo River and Green Bay, historical distribution and abundance of lake sturgeon in the Lake Michigan basin, Potential for lake sturgeon habitat rehabilitation in Green Bay and Lake Michigan tributaries, Mortality and Recruitment Mechanisms Affecting Early Life Stages of Lake Sturgeon in Lake Michigan, and streamside rearing of lake sturgeon in Lake Michigan., and Annual lake sturgeon coordination meetings.

NAME: Barbara Evans AFFILIATION: Department of Biology, Lake Superior State University
ADDRESS: 650 W. Easterday Ave, Sault Sainte Marie MI 49783
TEL: 906 635-2164 FAX: 906 635-2266 E-mail: bevans@lssu.edu
Biographical Sketch: I am currently a professor in the Biology department at Lake Superior State University, and have been here since 1994. My Ph.D. work characterized a novel visual foraging strategy in plankton feeding fish. I then pursued postdoctoral training in histological and molecular techniques to examine structure and function of the developing fish eye. I am interested in the functional development of photoreceptors in different species of fish. There is considerable diversity in the structure, function and developmental schedule of the retina between species, and these differences can be related to the quality of light in their natural environments. Sturgeon, an ancient species, has a retina very different from teleost fish. However, the literature is very limited in its coverage of sturgeon eye development, with nothing to my knowledge specifically regarding lake sturgeon.

Over the past three years, I have been examining the early development of lake sturgeon, in particular the development of their visual system and associated response to light. The methods include thin sectioning for light microscopy as well as behavioral tests. To date we have determined that lake sturgeon do not have

functional eyes at hatching, although they do respond to light. Once the eye develops, it is structured for high sensitivity to low light intensity, with low visual acuity. The wavelength and intensity of light that trigger a response are being examined, and hopefully these results will be useful for characterizing an optimal light environment for the early life history stages of the lake sturgeon.

NAME: Brant E. Fisher AFFILIATION: Indiana Department of Natural Resources
ADDRESS: Atterbury Fish & Wildlife Area 7970 South Rowe Street PO Box 3000
Edinburgh, Indiana 46124-3000
TEL: 812-526-5816 FAX: 812-526-2892 E-mail: bfisher@dnr.IN.gov
Biographical Sketch: Most of my lake sturgeon work is concerned with a remnant Ohio River drainage lake sturgeon population in the East Fork White River in southern Indiana. We do annual netting to assess populations characteristics, have completed a genetic study of the population, and are currently amid a telemetry project. We haven't undertaken any type of lake sturgeon study in the southern tip of Lake Michigan to date; we do keep track of dead lake sturgeon that annually wash up along Indiana's shoreline or that are caught as by-catch during other Lake Michigan salmonid work.

NAME: Patrick S. Forsythe AFFILIATION: Michigan State University, Department of Zoology
ADDRESS: 13 Natural Resources Building, East Lansing, MI 48875
TEL: (517) 432-4935 FAX: (517) 432-1699 E-mail: forsyt29@msu.edu
Biographical Sketch: Patrick Forsythe is a fourth-year PhD candidate in the Department of Zoology working in the Molecular Ecology Lab located in the Department of Fisheries and Wildlife at MSU. He is has just finished up his fourth consecutive field season and will soon begin analyzing and writing up the results of his dissertation research. One of Patrick's research objectives is to decompose the life history of the lake sturgeon into a series of stages so that hypotheses regarding factors that regulate recruitment of the species can be independently addressed. A second objective of his dissertation research is to add to our basic understanding of factors driving the unique life history evolution of an extremely long-lived iteroparous fish species. He is extremely interested in determining how selection has molded suites of life history traits of these species in order to maximize survivorship at each stage of development. Patrick is also using genetic tools to evaluate certain aspects of the lake sturgeon mating system such as the contribution of adults to annual recruitment. He hopes to defend in late 2007.

NAME: James D. Fossum AFFILIATION: JDFossum Environmental Consulting
ADDRESS: P.O. Box 41, Green Bay, WI 54305
TEL: 920 465-8805 E-mail: jfbio@netscape.com
Biographical Sketch: I am a FWS Retired and now have my own biological consulting company. While working for the FWS in Ecological Services FERC Program, I was part of many activities and initiatives to protect lake sturgeon and their habitat, through developing terms and conditions for inclusion in the operating licensing for hydroelectric projects.

NAME: Bill Franzin AFFILIATION: DFO Canada
ADDRESS: 501 University Cres Winnipeg, MB
Tel: 204-983-5082 Email: franzinw@dfo_mpo.gc.ca
Biographical Sketch: Researcher on fish and fish distributors, fish and fish habitat – SAR species

NAME: David Friedl AFFILIATION: MN DNR
ADDRESS: 14583 Catz Hwy 19 Detroit Lakes, MN 56501
Email: david.friedl@dnr.state.mn.us
Biographical Sketch: Sturgeon Restoration in Red River of the North Basin

NAME: Mike Friday AFFILIATION: Upper Great Lakes Management Unit – Lake Superior
ADDRESS: Upper Great Lakes Management Unit – Lake Superior Ontario Government Building
435 James Street South, Suite 221 E Thunder Bay, Ontario P7E 6S8
TEL: 807 475 1381 FAX: 807 473 3024 E-mail: mike.friday@Ontario.ca

Biographical Sketch: Kaministiquia River: Issue with dewatering traditional spawning area. Presently monitoring the impact of flow stability on access and spawning success. Issue lack of information on growth of YOY lake sturgeon in Canadian tributaries as related to sea lamprey treatment schedules. Identified a nursery area on the Kaministiquia River and monitored YOY growth. Black Sturgeon River: Issue is a lack of information concerning population size and seasonal distribution and movement. Initiatives include spring population estimates and radio telemetry work utilizing a data logger situated at the mouth of the river. Goulais River: Issue is a lack of information concerning habitat utilization and seasonal distribution and movement. Addressing issue by utilizing radio telemetry and a shoreline based data logger situated on the river.

NAME: Jim Fuller AFFILIATION: Special Agent USFWS
ADDRESS: P.O. Box 787 Freeland, MI 48623
TEL: 989 686-4578 FAX: 989 686-2837 E-mail: james_fuller@fws.gov
Biographical Sketch:

NAME: Brandon Gerig AFFILIATION: LSSU Fisheries and Wildlife
ADDRESS: 526 N. Ravine St. Sault Ste Marie, MI 49783
Tel: 906-253-1282 Email: bsgerig@lssu.edu
Biographical Sketch:

NAME: Roger W. Greil AFFILIATION: Lake Superior State University Aquatic Research Laboratory Manager
ADDRESS: 650 W. Easterday Ave. Sault Ste. Marie, MI 49783
TEL: 906-635-1949 FAX: 906-635-214 E-mail: rgreil@lssu.edu
Biographical Sketch: Lake Superior State University has been working with sturgeon in the St. Marys River starting in 2001. We have been taken measurements and fin samples (for both aging and genetics work) along with tagging all sturgeon caught.

NAME: Darrin Griffith AFFILLIATION: Little River Band of Ottawa Indians
ADDRESS: 375 River St. Manistee, MI 49660
TEL: 231 723-1594 Email: dgriffith@lrdoi.com
Biographical Sketch: I have conducted assessments of larval and juvenile sturgeon. This has included larval drift, YOY visual and trotlines surveys, habitat assessments and radiotelemetry of YOY and Age1 sturgeon. I have also been involved in the operation of the Little River Band's rearing facility.

NAME: Brian Gunderman AFFILIATION: Michigan DNR
ADDRESS: 427 US-41 North Baraga, MI 49908
TEL: 906 353-6651 FAX: 906 353-7464 E-mail: gunderb@michigan.gov
Biographical Sketch:

NAME: Wade Hamilton AFFILIATION: Michigan Department of Natural Resources
ADDRESS: 970 Emerson Rd. Traverse City, Michigan 49686
TEL: (231)922-5280 ext: 6804 FAX: (231)922-1853 E-mail: hamiltow@michigan.gov
Biographical Sketch: Supervisor of the Michigan Department of Natural Resources Special Investigative Unit. Responsible for large scale investigations statewide, both overt and covert in nature, that deal with illegal commercialization of Michigan's natural resources or involve any Threatened & Endangered or Protected species.

NAME: Tim Haxton AFFILIATION: OMNR
ADDRESS: 10 Campus Dr. Postal Bag 2002
Tel: 613-258-8240 Fax: 613-258-3920 Email: tim.haxton@ontario.ca
Biographical Sketch: Fisheries specialist with Aquatic Science Unit – PhD candidate – Been working on sturgeon for 11yrs; interested in anthropogenic stressors and population recovery.

NAME: Deserae Hendrickson AFFILIATION: Minnesota Department of Natural Resources
ADDRESS: 5351 North Shore Drive, Duluth, Minnesota, 55804
TEL: (218) 525-3754 ext. 201 FAX: (218) 525-0855 E-mail: deserae.hendrickson@dnr.state.mn.us
Biographical Sketch: Minnesota Department of Natural Resources (MDNR) has worked cooperatively with the Wisconsin Department of Natural Resources to re-introduce lake sturgeon into the St. Louis River estuary and Western Lake Superior. A total of 142,456 lake sturgeon fingerlings and 728,291 fry were stocked from 1983 through 2000. Lake Winnebago strain was stocked from 1983 through 1994 and Sturgeon River strain was stocked in 1998, 1999 and 2000. Coded wire tags were implanted in all fingerlings stocked by MDNR. Lake sturgeon encountered in assessments conducted along the south shore of Lake Superior have been marked with Pit and Floy tags. Stocking was discontinued in 2000 and management efforts have shifted to evaluation of natural recruitment and spawning habitat improvement. Returning adults are being monitored within traditional spawning areas, reproduction and recruitment are being monitored with drift-netting, gillnetting and electrofishing. A habitat improvement project within traditional spawning grounds is tentatively scheduled for completion during the winter of 2007/2008. Minnesota Department of Natural Resources has participated on the Lake sturgeon Subcommittee of the Lake Superior Technical Committee and the Lake Superior Lake Sturgeon Workgroup.

NAME: Charles Hendry AFFILIATION: Northeast Science & Information, Ontario MNR
ADDRESS: Ontario Gov. Complex 1270 HWY 101 E. P.O. Bag 3020, S. Porcupine, ON P0N 1H0
TEL: 705 235-1212 FAX: 705 235-1251 E-mail: charles.hendry@mnr.gov.on.ca
Biographical Sketch: I am currently preparing a state-of-the resource public reporting document for lake sturgeon in northeastern Ontario. This document is intended to provide the public with information about the historical, current and expected future condition of the resource as well as our current management activities.

NAME: Larry Hildebrand AFFILIATION: Golder Associates Ltd.
ADDRESS: 201 Columbia Ave Castlegar, BC V12 1A8
TEL: 250-365-0344 FAX: 250-365-0988 E-mail: lhildebrand@golder.com
Biographical Sketch: Conducted lake sturgeon research in the South Saskatchewan River to identify population characteristics, assess movements, identify critical habitats, and develop management plans
- Advisor to lake sturgeon research programs related to mining development on the Montcalm River and hydro development on the Ottawa River
-Have designed and conducted numerous research programs on sturgeon, with a focus on white sturgeon populations in the Fraser and Columbia river basins
-Co-chair for an AFS Western Division review of the Upper Basin Pallid Sturgeon Recovery Program
-Member of the Upper Columbia White Sturgeon Recovery Initiative, an international group of fisheries scientists tasked with the responsibility of identifying reason(s) for recruitment failure and methods to recover white sturgeon populations in the upper Columbia River Basin.

NAME: Fred Hnytka AFFILIATION: Department of Fisheries and Oceans
ADDRESS: 501 University Crescent Winnipeg, Manitoba, Canada R3T 2N6
TEL: 204-984-2506 FAX: 204-983-5192 E-mail: hnytkaf@dfo-mpo.gc.ca
Biographical Sketch: Employed with the Department of Fisheries and Oceans for 30+ years.
Since 2002, has been a Species at Risk Biologist primarily responsible for the development of recovery strategies for listed species under Canada's Species at Risk Act. In that capacity, will be responsible for the development of future recovery strategies or management plans for listed sturgeon populations.
Prior to 2002, employed as a Habitat Biologist and Environmental Assessment Biologist with DFO's Habitat Management Program primarily responsible for the review, assessment, approval and monitoring of development projects with the potential to impact fish or fish habitat.

NAME: Mark Holey AFFILIATION: USFWS Green Bay
ADDRESS: 2661 Scott Tower Dr. New Franken, WI 54229
TEL: 920 866-1760 FAX: 920 866-1710 E-mail: mark_holey@fws.gov

NAME: Marty Holtgren AFFILIATION: Little River Band of Ottawa Indians
ADDRESS: 375 River Street, Manistee MI 49660
TEL: 231-398-2193 E-mail: mholtgren@lrboi.com
Biographical Sketch: I am program manager for the Little River Band of Ottawa Indians sturgeon program. The Little River Band designed and operated the first portable streamside rearing facility in the Great Lakes. Our agency has conducted assessments for egg deposition, larval drift, young-of-year, and juvenile lake sturgeon in the Manistee River. We are currently working on a project which evaluates the streamside rearing facility and compares the reared fish to their wild cohort counterparts. I also am a steering committee member of the Lake Michigan Lake Sturgeon Task Group,

NAME: Thomas Howes AFFILIATION: Fond du Lac Reservation
ADDRESS: 1720 Big Lake Rd. Cloquet, MN_55720
TEL: (218) 878-8088 FAX: (218) 879-4854 E-mail: tomhowes@fdlrez.com

NAME: Matt Hughes AFFILIATION: Michigan DNR
ADDRESS: 34270 CR 652 MATTAWAN, MI 49071
TEL: 269-668-2696 FAX: 269-668-4659 E-mail: hughesmw@michigan.gov
Biographical Sketch: I culture lake sturgeon at Wolf Lake State Fish Hatchery. Eggs are obtained from wild fish in the Black River (Cheyboygan Co.) and the Sturgeon River (Baraga Co.) In addition to receiving eggs, Wolf Lake also receives larval fish as part of the "Head Start Program". Fish are raised to fall fingerlings and stocked back in natal waters. Maximum rearing capacity is 10,000 fish.

NAME: Roger A. Hugill AFFILIATION: Minnesota Dept. of Natural Resources
ADDRESS: Area Fisheries Headquarters 306 Power Ave. North PO Box 398 Hinckley, MN 55037
TEL: (320) 384-7721 FAX: (320)3846160 E-mail: roger.hugill@dnr.state.mn.us
Biographical Sketch: I have been the Area Fisheries Supervisor at Hinckley since 1992 and my management area includes several streams within the St. Croix Watershed that support viable lake sturgeon populations. They include: 80 miles of the St. Croix River, 50 miles of the Kettle River and 75 miles of the Snake River. We have done directed sampling for sturgeon on the Kettle River since 1992. Work done includes: a yearly sampling and tagging program since 1992, radio telemetry, habitat availability and preference sampling, dam removal, population estimates and age and growth work. On the St. Croix River we began an annual directed sampling and tagging program in 1994. On the Snake River we have done some directed sampling and tagging and have began planning to modify the Cross Lake Dam for fish passage. That will reconnect over 85 miles of the Snake River and several hundred miles of tributaries.

NAME: Jeremiah Johnson AFFILIATION: Michigan DNR
ADDRESS: 2732 Slater Dr. Kalamazoo, MI 49004
TEL: 269-330-0188 E-mail: johnsonj2@michigan.gov
Biographical Sketch:

NAME: Jim Johnson AFFILIATION: Michigan Department Natural Resources
ADDRESS: Alpena Fishery Research Station, 160 East Fletcher Alpena, MI 49707
TEL: 989-356-3232 FAX: 989-356-1951
Biographical Sketch: Manager of the Alpena Fishery Station. Chair, Lake Huron Technical Committee. Serve on MiDNR hatchery planning committees. Interested in rehabilitation biology and management.

NAME: Cheryl Kaye AFFILIATION: USFWS Marquette
ADDRESS: 129 Industrial Parkway, Marquette, Mi 49855
TEL: 906-226-1217 E-mail: cheryl_kaye@fws.gov
Biographical Sketch:

NAME: Heidi L. Keuler AFFILIATION: University of Wisconsin – La Crosse, WI (student) / USFWS – La Crosse FRO (employee)
ADDRESS: USFWS – La Crosse FRO 555 Lester Avenue Onalaska, WI 54650
TEL: 608-783-8417 FAX: 608-783-8450 E-mail: heidi_keuler@fws.gov
Biographical Sketch: Heidi Keuler graduated with a double major in biology and wildlife and a minor in environmental law enforcement from the University of Wisconsin – Stevens Point in 2000. She obtained a permanent position with the WI DNR as a conservation warden, but decided after a year that law enforcement was not for her. Heidi started with the USFWS – La Crosse Fishery Resources Office in 2002 and is currently employed there. She has been a graduate student at UW-La Crosse for the past two years and will be graduating with a degree in Aquatic Science in December. Heidi has sampled lake sturgeon on the Mississippi Watershed as well as on the Menominee Reservation for the past 4 years. She also has helped take fish health samples from lake sturgeon from Lake Winnebago and the Upper Lakes during the spearing season. Heidi hopes she has just merely begun her long journey of working with lake sturgeon.

NAME: Mike Kitt AFFILIATION: WDNR– Conservation Warden – Northeast Region
ADDRESS: 101 N. Ogden st., PO Box 208, Peshtigo, WI 54157
TEL: 715-582-5024 Fax: 715-582-5005 E-mail: michael.kitt@wisconsin.gov
Biographical Sketch: Consevation warden- 25yrs; 22yrs in Marinette-dealing with Green Bay and Menoninee River sturgeon populations with open hook and line season

NAME: Shawna L. Kjartanson AFFILIATION:University of Toronto,
ADDRESS: 60 Harbord Street – Unit 658B Toronto, Ontario, Canada M5S 3L1
TEL: 647-262-3474 FAX: 416-287-7642 E-mail: skjartanson@utsc.utoronto.ca
Biographical Sketch: I just started my Masters program at the University of Toronto, under the supervision of Dr. Nathan Lovejoy. Working in collaboration with Dr. Chris Wilson, at Trent University, we will examine the genetic diversity of lake sturgeon, focusing on their populations in western Canada. We hope to contribute to the present genetic information available for populations west of the Great Lakes and provide those respective protection agencies with more information with which to manage this species.

NAME: Meghan Kline AFFILIATION: LSSU, USFWS
ADDRESS: 300 W. Pier Dr. Apt 311A Sault Ste. Marie, MI 49783
Tel: 269-317-7963 Email: meghankline@gmail.com
Biographical Sketch: LSSU Student – USFWS Biological Aide on the St. Mary's Telemetry Project

NAME: Tracy Kolb AFFILIATION: Michigan State University
ADDRESS: 41 Nat. Res. Bld. Dept. of Fisheries and Wildlife MSU East Lansing, MI -48824
TEL: 517.353.6697 E-mail: kolbtrac@msu.edu
Biographical Sketch: I am a masters student in the Department of Fisheries and Wildlife at Michigan State University. My research interests include appropriately creating, implementing, and using shared fisheries information management systems for policy, education and conservation. For my master's project I am working with the USGS to create a sturgeon database, which combines status and trends information from multiple agencies and multiple sturgeon species to assess the impacts of habitat alteration.

NAME: Scott R. Koproski AFFILIATION: USFWS Alpena FRO
ADDRESS: Federal Building Rm. 204 145 Water St. Alpena, MI 49707
TEL: 989-356-5102 x 23 FAX: 989-356-4651 E-mail: scott_koproski@fws.gov
Biographical Sketch: I have been working with lake sturgeon for over 10 years in various systems. Most of my work has been geared towards the large connecting waterways such as the Detroit River and St. Marys River. I am currently involved in a project with Lake Superior State University working on the St. Marys River. We obtained funding for one year to implant adult lake sturgeon with a sonic telemetry tags. This past summer we collected over 70 lake sturgeon and we implanted 12 fish. Through the end of August, fish were tracked daily and since then we have attempted to locate each fish weekly. We are currently pursuing funds to continue

this study. If additional funds are obtained we plan on expanding our partnerships in order to obtain a better coverage of this huge system. We also plan on expanding our project to look at habitat preferences and usage by lake sturgeon within the St. Marys River.

NAME: Adam Kowalski AFFILIATION: USFWS
ADDRESS: 145 Water St. Alpena, MI 49707
Tel: 989-356-0362 Email: adam_kowalski@fws.gov
Biographical Sketch:

NAME: Adrienne Kral AFFILIATION: Little Traverse Bay Bands of Odawa Indians
ADDRESS: 7500 Odawa Circle Harbor Springs, MI 49740
TEL: 231-242-1670 FAX: 231-242-1690 E-mail: slenart@ltbbodawa-nsn.gov
Biological Sketch: The LTBB Great Lakes Fishery Program has monitored the incidental capture of lake sturgeon in the Little Traverse Bay Region of Lake Michigan since 2000. During 2000 to 2004 our agency collected biological data from 24 animals that were captured incidentally during biological surveys and in the local tribal commercial fishery. Due to this relatively high capture rate, in 2005 we began targeted survey work as part of the larger project entitled Status Assessment of Remnant Lake Sturgeon Populations in the Lake Michigan Basin in an effort to determine the seasonal distribution of animals in the Little Traverse Bay region. To date we have collected biological data from an additional 12 animals while providing researchers with 28 tissue samples for inclusion in the Lake Michigan Basin Genetics Sub-project. Future work will likely focus on determining whether spawning occurs locally.

NAME: Jeannette Krieger-Kanefsky AFFILIATION: Ohio State University
ADDRESS: 1373 Red Leaf Lane East Lansing, MI 48823
TEL: 517-203-2799 E-mail:jkrieg@frontiernet.net
Biographical Sketch: I graduated in molecular genetics in 2000 from Ohio State University, where I did my dissertation work on the molecular phylogeny of North American sturgeons and the evolution of the nuclear 18S ribosomal RNA (rRNA) gene in sturgeons, particularly lake sturgeon. During this work we discovered the presence of within-individual variation of the 18S rRNA gene in all species of North American sturgeons, the first such finding in a vertebrate. After graduation, I was employed in a number of positions in genetic research and DNA sequencing, none of them related to sturgeon, but due to the generosity of my supervisors I was fortunate enough to have the opportunity to expand upon and continue the work on sturgeon that I began in graduate school. As the result of a collaboration, I was able to survey most of the Eurasian acipenseriform species for the unusual within-individual variation of the 18S rRNA gene, and also to expand the molecular phylogeny study to include most Eurasian acipenseriform species. I am currently conducting a study to determine if different variants of the 18S rRNA gene are expressed in different lake sturgeon tissues or if there is only one functional expressed variant (as we believe based on our previous work). Next on the agenda is to examine the sequences that provide transcriptional control of the rRNA genes in lake sturgeon in order to investigate the apparent selective expression of 18S rDNA that is occurring in these fish.

NAME: Stephen Lenart AFFILIATION: Little Traverse Bay Bands of Odawa Indians
ADDRESS: 7500 Odawa Circle Harbor Springs, MI 49740
TEL: 231-242-1670 FAX: 231-242-1690 E-mail: slenart@ltbbodawa-nsn.gov
Biological Sketch: The LTBB Great Lakes Fishery Program has monitored the incidental capture of lake sturgeon in the Little Traverse Bay Region of Lake Michigan since 2000. During 2000 to 2004 our agency collected biological data from 24 animals that were captured incidentally during biological surveys and in the local tribal commercial fishery. Due to this relatively high capture rate, in 2005 we began targeted survey work as part of the larger project entitled Status Assessment of Remnant Lake Sturgeon Populations in the Lake Michigan Basin in an effort to determine the seasonal distribution of animals in the Little Traverse Bay region. To date we have collected biological data from an additional 12 animals while providing researchers with 28 tissue samples for inclusion in the Lake Michigan Basin Genetics Sub-project. Future work will likely focus on determining whether spawning occurs locally.

NAME: Rick Loeffler AFFILIATION: North American Hydro, Inc.
ADDRESS:116 State Street P.O. Box 167 Neshkoto, WI 54960
E-mail: nahi@vbe.com
Biographical Sketch: Lake Sturgeon Issues: Sturgeon Passage at Hydroelectric Plants.

NAME: Andrew Loftus AFFILIATION: Michigan State University
ADDRESS: 3116 Munz Drive Suite A Annapolis, MD 21403
TEL: (410) 295-5997 E-mail: ALoftus501@aol.com
Biographical Sketch: Andrew Loftus is working in conjunction the USGS National Biological Information Infrastructure, and Dr. William Taylor and Tracy Kolbe of Michigan State University, to develop a prototype fisheries information system using North American sturgeon as a case study. The intention of the system is to provide a tool to managers and researchers for sharing information that is adaptable enough to accommodate existing databases and not to create a new database that is duplicative of ongoing efforts. To help accomplish this, a guidance team of professionals knowledgeable about various sturgeon species and populations is being used as a resource to guide this effort.

NAME: Jason Lorenz AFFILIATION: LSSU
ADDRESS: 1304 W. Easterday Ave. Sault Ste. Marie, MI 49783
Tel: 906-630-6248 Email: jlorenz@lssu.edu
Biographical Sketch: Senior at LSSU in Fisheries and Wildlife Management – Senior thesis Lake Sturgeon use in St. Mary's River

NAME: Robert Luke AFFILIATION: Department of Fisheries and Oceans Canada
ADDRESS: 501 University Crescent, Winnipeg, Manitoba, R3T R3T 2N6
TEL: 204-983-0021 FAX: 204-989-3073 E-mail: luker@dfo-mpo.gc.ca
Biographical Sketch: Have worked as a Fishery Officer, Conservation and Protection for 23 years, 10+years in Fisheries Management in the Arctic, commercial, sport, domestic, subsistence and marine mammal fishery monitoring compliance, 10+ years working under the provision of the Fisheries Act for Fish, Habitat protection monitoring and enforcement for compliance, 2 years as the Central and Arctic SARA C&P Fishery Officer for the training and Coordination of the Species at Risk Legislation

NAME: Joseph Lyons AFFILIATION: Menominee Indian Tribe of Wisconsin, Environmental Services Dept.
ADDRESS: Forestry Center N1035 STH 47 Keshena, WI 54135
TEL: (715) 799-3179 FAX: (715) 799-6153 E-mail: jlyons@mitw.org
Biographical Sketch:

NAME: Kevin Mann AFFILIATION: Michigan Tech University
ADDRESS: 1400 Townsend Ave. Houghton, MI 49931
Tel: 248-321-3970 Email: kamann@mtu.edu
Biographical Sketch:

NAME: Holly Madill AFFILIATION: Great Lakes Fishery Trust
ADDRESS: Great Lakes Fishery Trust 600 W. St. Joseph, Ste. 10 Lansing, MI 48933

TEL: 517b 371-7468 Website: www.glft.org
Biographical Sketch: The mission of the Great Lakes Fishery Trust (GLFT) is to provide funding to enhance, protect and rehabilitate Great Lakes fishery resources. The GLFT will manage its resources to compensate for lost use and enjoyment of the Lake Michigan fishery resulting from the operation of the Ludington Pumped Storage Plant. Since it's inception in 1996, the GLFT has granted a total of $32,721,807 toward meeting its mission. The average amount of granting per year is now $5 million. While the GLFT has always granted monies for Great Lakes fishery research, in 2001 it opened a category specifically to address the recruitment, rehabilitation, and restoration of lake sturgeon. To date, the GLFT has funded over $14 million for Ecosystem Health and Sustainable Fish Populations research. Of that amount, $3,825,749 (25 projects) has been dedicated to lake sturgeon rehabilitation and research, accounting for 27% of the research funding and only since 2001. Needless to say, lake sturgeon is of great importance to the GLFT and will continue to be a focus.

NAME: Forrest Madosh AFFILIATION: Fish and Wildlife Biologist/manager and Cons. Warden
ADDRESS: P.O. Box 910 Keshena, WI 54135
Tel:715-799-5116 Fax:715-799-5165
Biographical Sketch:

NAME: Jenni McDermid AFFILIATION: University of Toronto and Wildlife Conservation Society
ADDRESS: 25 Harbord Street, Toronto, ON, M5S 3G5
TEL: 416-946-7231 E-mail: jmcdermid@zoo.utoronto.ca
Biographical Sketch: I will be beginning my employment with the Wildlife Conservation Society of Canada in January 2007 working on fish species in the Ontario Boreal forest. To date my research has focused on lake trout, however with this new position I hope to implement a sturgeon research project and therefore I'm looking to find out what type of sturgeon research is currently underway and hope to make contacts and identify potential partners or collaborators.

NAME: Rod McDonald AFFILIATION: DFO Sea Lamprey Control Center
ADDRESS: 1 Canal Dr. Sault Ste Marie, ON P6R-6W4
Tel: 705 941-3009 Fax: 705-941-3025 Email: mcdonaldr@dfo-mpo.gc.ca
Biographical Sketch:

NAME: Bruce McGregor AFFILIATION: Sagamok Anishnawbek (Saulteaux Enterprises)
ADDRESS: Sagamok Anishnawbek First Nation P.O Box 850 Massey, Ontario, P0P 1P0
TEL: (705) 865 1134 FAX: (705) 865-1137 E-mail: bruce@saulteauxenterprises.ca
Biographical Sketch: Sagamok has conducted lake sturgeon assessments in the Spanish River which is located in North Channel of Lake Huron. Issues and concerns are, status of juvenile lake sturgeon in the Spanish River, the impact industry has on spawning lake sturgeon in the Spanish River, developing regulations to maintain water levels during the spawn.

NAME: Justin McLeod AFFILIATION: LSSU ARL
ADDRESS: 322 Maple St. Soo, MI 49783
Tel: 989-326-3603 Email: j.d.mcleod@hotmail.com
Biographical Sketch: BS in Fish and Wildlife mgmt. 2years w/ USFWS. 1 yr. with MDNR

NAME: Rob Mellow AFFILIATION: Golder Associates Ltd.
ADDRESS: 1010 Lorne St. Sudbury, ON P3C4R9
TEL: 705 524-6861 x235 FAX: 705 524-1984 E-mail: rmellow@golder.com
Biographical Sketch:

NAME: Scott McKenzie AFFILIATION: Golder Associates Ltd.
ADDRESS: 1000, 940-6th Avenue SW Calgary, Alberta T2P 3T1
TEL: 403-260-2274 FAX: 403-299-5606 E-mail: smckenzie@golder.com

Biographical Sketch: I have studied white sturgeon (Acipenser transmontanus) for the past fifteen years in western Canada and authored or provided senior review of more than thirty reports and publications on sturgeon. In the 1990's, I managed numerous white sturgeon studies in the Columbia River basin and directed the large-scale, multi-year Fraser River White Sturgeon Monitoring Program. More recently, my work with white sturgeon has focussed on recovery planning and research. I presently participate in the Nechako White Sturgeon Recovery Initiative as a member of the Nechako River White Sturgeon Recovery Team. As the co-author of the recovery plan for Nechako River white sturgeon and technical member of the recovery team, I continue to act in a senior advisory role for numerous projects investigating Nechako River white sturgeon as part of ongoing efforts to recover this endangered stock.

NAME: Curtiss McLeod AFFILIATION: Golder Associates
ADDRESS: #300, 10525 – 170 St. Edmonton, Alberta T5P 4W2
TEL: (780)930-8635 FAX: (780)483-1574 E-mail: curtiss_mcleod@golder.com
Biographical Sketch: Lake sturgeon population / movements /life history studies in the South /North Saskatchewan Rivers, in Alberta (north western limit of range of lake sturgeon), advisor and program design for lake sturgeon monitoring studies on the Groundhog river, Ontario (mine water effluent impact studies), participation and direction of white sturgeon studies on the Columbia River (hydroelectric developments) and the Fraser River (baseline and recovery program studies).

NAME: Robert Mills AFFILIATION: Michigan DNR
ADDRESS: 8717 N. Roscommon Rd Roscommon, Michigan 48653
TEL: (989)275-5151 x2070 FAX: (989)275-5167 E-mail: millsre@michigan.gov
Biographical Sketch: Member of the Michigan Department of Natural Resources Special Investigative Unit, responsible for large scale investigations primarily in the southern half of the Lower Peninsula.

NAME: Jessica Mistak AFFILIATION: Michigan DNR, Fisheries Division
ADDRESS: Marquette Fisheries Station 484 Cherry Creek Rd. Marquette, MI 49855
TEL: 906-249-1611 x308 FAX: 906-249-3190 E-mail: mistakjl@michigan.gov
Biographical Sketch: Jessica Mistak is a senior fisheries biologist with the Michigan Department of Natural Resources Habitat Management Unit where she is responsible for initiatives concerning conservation, protection, and management of aquatic habitat. Jessica's work involves providing technical, legal, and policy assistance to the Department on a variety of aquatic habitat related issues, including stream restoration, dam removal, fish passage, and participation in Michigan's Upper Peninsula hydropower licensing proceedings under the jurisdiction of the Federal Energy Regulatory Commission (FERC). Jessica is a Senior Fellow with the Environmental Leadership Program and Past-President of the Michigan Chapter of the American Fisheries Society.

NAME: Ashley Moerke AFFILIATION: Lake Superior State University
ADDRESS: 650 W. Easterday Avenue, Sault Ste Marie, MI 49783
TEL: 906/635-2153 FAX: 906/635-2266 E-mail: amoerke@lssu.edu
Biographical Sketch: I am an Assistant Professor in Biology and Co-Director of the Aquatic Research Laboratory at Lake Superior State University. The LSSU Aquatic Research Lab has been sampling lake sturgeon in the St. Marys River since 2000. In 2006, in collaboration with the USFWS, Bay Mills Indian Community, and the Soo Area Sportsmen's Club, we began an ultrasonic telemetry study in the River. Currently, we have 12 sturgeon with sonic tags implanted and we are tracking movement on a weekly basis.

NAME: Lloyd Mohr AFFILIATION: Upper Great Lakes Management Unit, OMNR
ADDRESS: 1450 Seventh Avenue East, Owen Sound, ON N4K 2Z1
TEL: (519) 371-5669 FAX: (519) 371-5844 E-mail: lloyd.mohr@Ontario.ca
Biographical Sketch: I have worked with lake sturgeon in Lake Huron for 12 years, the first 8 years focused on commercial sampling with the past 4 years focusing on spawning run assessment. I am interested in the movement, recruitment, growth and spawning periodicity of lake sturgeon in the Great Lakes and in general.

NAME: Bob Moody AFFILIATION: Michigan Dept. of Natural Resources
ADDRESS: DNR Operations Services Center, 5100 M-123 Newberry, MI 49868
TEL: 906-293-5131, Ext. 4360 FAX: 906-293-8728 E-mail: moodyr@michigan.gov
Biographical Sketch: I am responsible for managing the eastern portion of the Upper Peninsula waters of Michigan draining to Lake Superior. I have one stream (the Tahquamenon River) in my management unit that traditionally held Lake Sturgeon as has been reported by local Native American Communities. However, we have no evidence that sturgeon continue to use this system. I am interested in investigating why sturgeon no longer exist in this river and potentially restoring this historical population.

NAME: Seth Moore AFFILIATION: Grand Portage Band of Chippewa
ADDRESS: Grand Portage Band of Chippewa 27 Store Rd. Grand Portage, MN 55605
TEL: 218-475-2415 x22 FAX: 218-475-2615 E-mail: samoore@boreal.org
Biographical Sketch:

NAME: Travis Moore AFFILIATION: MISSOURI DOC
ADDRESS: 653 Clinic Road, Hannibal MO 63401
TEL: 573-248-2530 FAX: 573-248-2532 Email: Travis.Moore@mdc.mo.gov
Biographical Sketch: Travis Moore has been employed with the Missouri Department of Conservation for 15 years, 13 of which have been in Northeast Missouri. For the last few years, he has worked on a couple of projects related to both shovelnose and lake sturgeon in the pooled portions of the Upper Mississippi. He is currently co-supervising two graduate students (Greg Snellen, Mark Miller) who are addressing the following two issues: where, when, and how to catch lake sturgeon of various sizes in the Mississippi River, and habitat use of adult/sub-adult lake sturgeon in the Mississippi River. Travis and the graduate students are also cooperating with various other agencies to identify genetic stocks in this reach of the river, develop a blood test to sex and stage lake sturgeon, diet analysis, and contaminant analysis in lake sturgeon.

NAME: Terry Morse, Supervisory Fish Biologist AFFILIATION: U.S. Fish and Wildlife Service
ADDRESS: 1929 Industrial Parkway, Marquette, Mi 49855
TEL: 906-226-1236 FAX: 906-226-3632 E-mail: terry_morse@fws.gov
Biographical Sketch: Supervised Control Unit at Marquette Biological Station for 20 years. Was one of originators of the Sturgeon Protocol for Treatment of streams with demonstrated sturgeon reproduction. Negotiate with state DNR fisheries folks regarding treatments of sturgeon streams on annual basis.

NAME: Allison Niggemyer AFFILIATION: Great Lakes Fishery Commission
ADDRESS: 2100 Commonwealth Blvd. Suite 100 Ann Arbor, MI 48105
TEL: 734-662-3209 ext. 28 FAX: 734-741-2010 E-mail: allison@glfc.org
Biographical Sketch: My primary involvement in lake sturgeon issues in the Great Lakes is as the Great Lakes Fishery Commission's representative to the Lake Michigan Lake Sturgeon Task Group. My primary area of interest with respect to lake sturgeon is science-based restoration planning and improving the process by which restoration plans are formulated. I am generally interested in applying information about lake sturgeon ecology and life history to restoration planning, and I am also interested in understanding and prioritizing impediments to lake sturgeon restoration in the Great Lakes. Additionally, I have some experience with green sturgeon issues on the Pacific Coast.

NAME: Lisa O'Connor AFFILIATION: DFO Great Lakes Lab. For Fisheries and Aquatic Sciences
ADDRESS: 1 Canal Dr. Sault Ste. Marie, ON P6A 6W4
TEL: 1-705-942-2848 FAX: 1-705-942-4025 E-mail: oconnorl@dfo-mpo.gc.ca
Biographical Sketch: Lisa O'Connor has worked for Fisheries and Oceans Canada for over 10 years on a variety of projects. For her most recent work, she has researched fish passage through vertical slot fishways at low-head barrier dams. As part of this work, she has instituted the use of the Passive Integrated Transponder (PIT) tags and antennae arrays for not only the fish passage study, but also a variety of other projects around the Great Lakes and across Canada.

NAME: Stephanie Ogren AFFILIATION: Little River Band of Ottawa Indians
ADDRESS: 375 River Street, Manistee MI 49660
TEL: 231-398-2192 E-mail: sogren@lrboi.com
Biographical Sketch: I assist with for the Little River Band of Ottawa Indians sturgeon program. The Little River Band designed and operated the first portable streamside rearing facility in the Great Lakes. Our agency has conducted assessments for egg deposition, larval drift, young-of-year, and juvenile lake sturgeon in the Manistee River. We are currently working on a project which evaluates the streamside rearing facility and compares the reared fish to their wild cohort counterparts.

NAME: Carlye Olson AFFILIATION: 1854 Authority
ADDRESS: 4428 Haines Road, Duluth, MN 55811
TEL: 218-722-8907 FAX: 218-722-7003 E-mail: colson3@1854authority.org
Biographical Sketch: I am a fish and wildlife biologist for the1854 Treaty Authority. I have been involved in a juvenile lake sturgeon radio telemetry study. We are looking for information on habitats that are being used by this life stage and hope to be able to provide managers with information about the critical habitats that should be protected and/or rehabilitated to enhance the success of restoring a self-sustaining population of sturgeon in the lower St. Louis River.

NAME: Holly Patrick AFFILIATION: Purdue University
ADDRESS: Purdue University Dept. Forestry & Nat. Res. 195 Marsteller St. W. Lafayette, IN, 47907
TEL (765) 714-0127 FAX: (765) 583-2490 E-mail: hkpatric@purdue.edu
Biographical Sketch: Holly is a Masters student in Fisheries and Aquatic Sciences at Purdue University working under the supervision of Dr. Trent Sutton. Holly and Trent are currently working on a laboratory-based research project looking at the host-size selection and lethality of sea lamprey on lake sturgeon. Results from this study will provide insights as to whether the negative effects on long-term population viability from sea lamprey parasitism on adult and sub-adult lake sturgeon will outweigh the negative effects from non-target lake sturgeon mortality resulting from lampricide treatment. In addition, Holly and Trent are preparing a photographic key of sea lamprey wounds on lake sturgeon to produce a wound-classification field guide.

NAME: Aaron Paquet AFFILIATION: Northern Environmental
ADDRESS: 15851 S. US 27 Bld 30 Lansing, MI 48906
Tel: 888-662-1232 Fax: 517-702-0477 Email: apauquet@northernenvironmental.com
Biographical Sketch:

NAME: Stephan Peake AFFILIATION: Canadian Rivers Institute, University of New Brunswick
ADDRESS: 10 Bailey Drive, Fredericton, NB, Canada. E3B 6E1
TEL: (506) 458-7462 FAX: (506) 453-4583 E-mail: speake@unb.ca
Biographical Sketch: I have been an assistant professor at the University of New Brunswick for the past 4 years, with research focused on exercise physiology of fish, fish locomotion and passage at culverts and fishways, and lake sturgeon behaviour and ecology. Recently I have begun a major lake sturgeon research project (funded by Manitoba Hydro and NSERC) aimed at evaluating current mitigative strategies for hydro impacts on lake sturgeon, including provision of fish passage, hatchery supplementation, and habitat remediation. The project also involves intensive research into general ecology of lake sturgeon (particularly juveniles) and stress physiology in this species. The work is being conducted in collaboration with Drs. Gary Anderson and Mark Abrahams at the University of Manitoba.

NAME: Maureen Peltier AFFILIATION: Anishinabek/Ontario Fisheries Resource Centre
ADDRESS: 755 Wallace Rd., Unit #5 North Bay, ON P1B 8G4
TEL: 705-472-7888 FAX: 705-472-6333 E-mail: mpeltier@aofrc.org
Biographical Sketch: As a "Centre of Excellence" for fisheries assessment and management, the A/OFRC employs standardized assessment tools, innovative science and technology and traditional knowledge to evaluate stock status and stresses on fish populations and their habitats. The Centre's studies integrate western science and traditional ecological knowledge (TEK), and lead to recommendations to management authorities.

As a partnership between the Union of Ontario Indians and Ontario, the Anishinabek/Ontario Fisheries Resource Centre is well positioned to undertake many different fisheries projects.

NAME: Nicholas Popoff AFFILIATION: Michigan DNR
ADDRESS: Charlevoix Fisheries Research Station, 96 Grant St., Charlevoix, MI 49720
TEL: 231-547-2914 x231 E-mail: popoffn@michigan.gov
Biographical Sketch: I manage the Tribal Coordination Unit for the MDNR. My work deals with Great Lakes and inland fisheries within the 1836 and 1842 treaty areas. Previously I worked for the USGS in Cook, WA where I completed white sturgeon behavior projects related to channel dredging and hydropower dam passage.

NAME: Tim Purdy AFFILIATION: Ontario Commercial Fisherman Assoc.
ADDRESS: 412 Michigan Ave. Point Edward, ON Canada N7VorU?-1G3
Tel: 519-344-7789 Fax: 519-344-8132 Email: tpurdy@bellnet.cg
Biographical Sketch: Commercial fisherman, involved with sturgeon tagging in southern Lake Huron

NAME: Jeremy Pyatskowit AFFILIATION: Menominee Indian Tribe of WI
ADDRESS: PO Box 910, Keshena, WI 54135
TEL: 715-799-6150 FAX:715-799-6153 E-mail: jpyatskowit@mitw.org
Biographical Sketch: The Menominee Indian Tribe of WI has implemented a Lake Sturgeon Restoration Plan that has been in place since 1995. To date the plan involved planting sturgeon in Legend Lake to provide a fishery for tribal members and transferring fish from below Shawano on the Wolf River to locations on the Wolf River within the reservation. The plan is currently being reviewed to determine the steps necessary for the program to succeed.

NAME: Jonathan Pyatskowit AFFILIATION: USFWS
ADDRESS: 2800 Main St. E.
Tel: 715-682-6185 Email: jonathan_pyatskowit@fws.gov
Biographical Sketch: Lake sturgeon assessment Bad and White Rivers. Ontonagon sturgeon assessment.

NAME: Henry Quinlan AFFILIATION: USFWS Lake Superior
ADDRESS: 2800 Lakeshore Drive, E., Ashland, WI 54806
TEL: 715 682-6185 FAX: 715 682-8899 E-mail: henry_quinlan@fws.gov
Biographical Sketch: I work cooperatively with biologists from state and tribal agencies, universities, and other organizations to further lake sturgeon rehabilitation efforts in Lake Superior. This involves field studies of adult, juvenile and larval sturgeon in the Bad and White rivers, Wisconsin and juvenile fish in the big pond, associated with the Ontonagon River, Michigan. Me, and many others sampled spawning populations around the lake for geneticists to describe the genetic stock structure. I serve as the Lake Superior Technical Committee Lake Sturgeon Work Group chairman, helping to coordinate and track progress toward lake sturgeon rehabilitation in Lake Superior. I have been involved in lake sturgeon assessment and management in the Lake Superior basin since 1995. Recent activities include assessment of spawning runs in tributaries that historically or currently support self-sustaining populations, identification and description of juvenile and adult habitat, description of larval and yoy movement and growth, and technical assistance to other agencies involved with management and assessment of lake sturgeon. I currently chair the Lake Sturgeon Work Group of the Lake Superior Technical Committee and spend a lot of time every two years helping to host these Sturgeon Coordination Meetings.

NAME: Donald J. Reiter AFFILIATION: Menominee Indian Tribe of Wisconsin
ADDRESS: P.O. Box 910 Keshena, WI 54135
Tel: 715-799-5116 Fax: 715-799-5165 Email: manager90@frontiernet.net
Biographical Sketch: The Menominee Indian Tribe of Wisconsin continues to undergo research on lake sturgeon restoration. Lake sturgeon had been extirpated from the Menominee Indian Reservation, WI until 1994 when federal, state, and tribal biologists began implementing strategies to reintroduce lake sturgeon to reservation waters. The lake sturgeon is an important part of the Menominee Indian Tribe culturally and also

provided subsistence in years past. Research activities include reintroduce adult lake sturgeon, stock yearling lake sturgeon, monitor behavior and habitat use using radio-telemetry, and conduct annual population assessments on reintroduced populations. These activities will enable the identification of preferred habitat for lake sturgeon on the Menominee Reservation and bring the population to a self-sustaining level. Biological monitoring of movement behavior, habitat use and population status will allow adaptation of current management strategies as needed. The data collected and lake surveys completed will be used in the development of management plans and Menominee Fishing Rules and Regulations governing lake sturgeon.

NAME: Tom Rozich AFFLIATION: Fisheries Division, Michigan Department of Natural Resources
ADDRESS: 8015 Mackinaw Trail Cadillac, MI 49601
TEL: 231/775-9727 ext 6070 FAX: 231/775-9671 E-mail: rozicht@michigan.gov
Biographical Sketch:

NAME: Ann Runstrom Fishery Biologist AFFILIATION: USFWS La Crosse and Carterville FRO
ADDRESS: 555 Lester Ave. Onalaska, WI 54650
TEL: 608-783-8433 FAX: 608-783-8450 E-mail: ann_runstrom@fws.gov
Biographical Sketch: Ann Runstrom has worked with the Menominee Indian Tribe facilitating implementation of the Menominee Tribe's Lake Sturgeon Management Plan since 1994; working to restore lake sturgeon to their native range in the Wolf River on the Reservation and to establish a lake sturgeon population in a Reservation lake.
Outside the Great Lakes basin, Ann works with the Mississippi Interstate Cooperative Resource Association (MICRA) on sturgeon and paddlefish management issues in the Mississippi basin.

NAME: Jennie Ryman AFFILIATION: University of Waterloo (Grad Student)
ADDRESS:
Email: jryman@scimail.uwaterloo.ca
Biographical Sketch:

NAME: Todd Schaller AFFILIATION: WDNR– Conservation Warden Supervisor – Oshkosh Team
ADDRESS: Dept Nat Res 625 E Hwy Y, Suite 700, Oshkosh WI 54901
TEL: 920-424-3055 FAX: 920-424-4404 E-mail: Todd.Schaller@wisconsin.gov
Biographical Sketch: Oversee the Sturgeon Enforcement Program on the Lake Winnebago System related to the Sturgeon Spearing Season on Lake Winnebago and the Upriver Lakes and the spring Sturgeon Guard Program on the Wolf River. Law Enforcement representative on Lake Winnebago Citizen Sturgeon Advisory Committee. The Sturgeon Guard program is a DNR partnership with Sturgeon For Tomorrow and citizen volunteers providing protection during the spring Sturgeon spawning run on the Wolf River system.

NAME: Lee Schneckenberger AFFILIATION: USFWS Law Enforcement
ADDRESS: 70 Sunrise Highway Suite 419 Valley Stream, NY 11581
TEL: 516 825-3950 x234 FAX: 516 825-3597 E-mail: lee_schneckenberger@fws.gov
Biographical Sketch: I have facilitated Law Enforcement efforts with respect to the import of Lake Sturgeon from Canada into the US, and have documented violations of international (CITES), provincial and state law. Furthermore, I anticipate initiating investigations involving the unlawful interstate and foreign commerce of Lake Sturgeon, including within the caviar trade.

NAME: George Scholten AFFILIATION: Tennessee Wildlife Resources Agency
ADDRESS: TWRA – Fisheries Division P.O. Box 40747 Nashville, TN 37204
TEL: (615) 781-6574 FAX: (615) 781-6667 E-mail: George.Scholten@state.tn.us
Biographical Sketch: George Scholten is the Reservoir and River Fisheries Coordinator for the Tennessee Wildlife Resources Agency. He coordinates TWRA's involvement with the Lake Sturgeon Reintroduction Program in the upper Tennessee and Cumberland rivers. The fish that are stocked as part of this program are hatched from eggs that are donated each year by the Wisconsin Department of Natural Resources.

NAME: Amy M Schueller AFFILIATION: Michigan State University
ADDRESS: Michigan State University 13 Natural Resources Building E. Lansing, MI 48824
TEL: 517-353-6697 E-mail: schuel11@msu.edu
Biographical Sketch: I am a doctoral student in the Department of Fisheries and Wildlife at Michigan State University working with Daniel Hayes. My areas of interest include using population dynamics and simulation modeling in order to address questions of management concern. Currently, I am working on an individual-based model to address concerns regarding stocking strategies and the trade-offs between demographics and genetic issues such as inbreeding. The hope is that this information will help managers of lake sturgeon to develop stocking strategies best suited for their specific population of concern.

NAME: Kim Scribner AFFILIATION: MSU Department of Fisheries and Wildlife & Dept. of Zoology
ADDRESS: 13 Natural Resources Building, East Lansing, MI 48824-1222
TEL: 517-353-3288 FAX: 517-432-1699 E-mail: scribne3@msu.edu
Biographical Sketch: Education: BS – Univ. Wisconsin-Stevens Point, MS – Texas Tech University, PhD – Univ. of Georgia Interests – Population ecology and genetics
Work with sturgeon

a) Great Lakes – delineation of stock structure and phylogeographic history in the Great Lakes including estimation of historical gene flow and effective population size; stock-specific estimates of recruitment; stock-specific use of open water habitats in the Great Lakes; compositional estimates of harvest
b) Spawning populations in Great Lakes tributaries – factors affecting recruitment; sources and magnitude of mortality during early life history; evaluation of different supplementational and rearing strategies; mating systems and estimates of male and female reproductive success; quantitative genetics of early life history traits and juvenile growth

NAME: John Seyler AFFILIATION: Golder Associates Ltd.
ADDRESS:1010 Lorne Street, Sudbury, ON P3C 4R9
TEL: 705 524 6861 x 291 FAX: 705 524 1984 E-mail: jseyler@golder.com
Biographical Sketch: John has worked extensively with Government, aboriginal communities and industry on lake sturgeon issues related to habitat utilization modeling, population assessment, sampling techniques and the development of harvest regulations.

NAME: Randy Seymour AFFILIATION: Little Traverse Bay Bands of Odawa Indians
ADDRESS: 7500 Odawa Circle Harbor Springs, MI 49740
TEL: 231-242-1670 FAX: 231-242-1690 E-mail: slenart@ltbbodawa-nsn.gov
Biological Sketch: The LTBB Great Lakes Fishery Program has monitored the incidental capture of lake sturgeon in the Little Traverse Bay Region of Lake Michigan since 2000. During 2000 to 2004 our agency collected biological data from 24 animals that were captured incidentally during biological surveys and in the local tribal commercial fishery. Due to this relatively high capture rate, in 2005 we began targeted survey work as part of the larger project entitled Status Assessment of Remnant Lake Sturgeon Populations in the Lake Michigan Basin in an effort to determine the seasonal distribution of animals in the Little Traverse Bay region. To date we have collected biological data from an additional 12 animals while providing researchers with 28 tissue samples for inclusion in the Lake Michigan Basin Genetics Sub-project. Future work will likely focus on determining whether spawning occurs locally.

NAME: Dan Sheill AFFILIATION: US Fish and Wildlife Service Law Enforcement
ADDRESS: 3800 Packard Rd., Ste. 160 Ann Arbor, MI 48108
Tel: 734/971-9755 Fax: 734/971-9754 Email: Dan_sheil@fws.gov
Biographical Sketch:

NAME: Kregg Smith AFFILIATION: MDNR Fisheries Division
ADDRESS: 621 N 10th Street Plainwell, MI 49080
TEL: (269) 685-6851 FAX: (269) 685-1362 E-mail: smithkrm@michigan.gov

Biographical Sketch: Kregg Smith, Fisheries Management Biologist, MDNR -Southern Lake Michigan Management Unit has worked on lake sturgeon population dynamics and larval production in Black Lake, Michigan. My experience is in collecting and quantifying larvae, YOY, Juvenile, and adult lake sturgeon; using drift nets, trawling, gillnet, setlines, electrofishing, and ultrasonic telemetry. I am a member of the Lake Michigan Lake Sturgeon Task Group, MDNR lake sturgeon committee. My work is interested in rehabilitation of lake sturgeon populations in the Saint Joseph, Kalamazoo, and Grand Rivers. Some of the work currently ongoing in these river systems include inventorying habitat for different lake sturgeon life stages, obtaining and evaluating archaeological lake sturgeon remains to gain knowledge of historic genetic diversity in conjunction with current population information and genetic diversity that will assist fisheries managers in understanding the changes within these populations as well as between populations in southern Lake Michigan, coordinating and assisting in sampling efforts for biological data in each river as well as along the St. Joseph Reef in Southern Lake Michigan.

NAME: Paul Sullivan AFFILIATION: DFO
ADDRESS: Sea Lamprey Control Centre 1 Canal Dr. Sault Ste. Marie, ON P6A-6W4
Tel: 705-941-3010 Fax: 705-941-3052 Email: sullivanP@dfo-mpo.ga.ca
Biographical Sketch:

NAME: Trent M. Sutton AFFILIATION: Purdue University
ADDRESS: Dept. Forestry and Nat. Res. 195 Marsteller St. W. Lafayette, IN 47907
TEL: 765-496-6266 FAX: 765-496-2422 E-mail: tsutton@purdue.edu
Biographical Sketch: Evaluation of remnant stock status, early life history dynamics, habitat availability and quality, and population viability of Great Lakes lake sturgeon populations.

NAME: Craig A. Tabor AFFILIATION: US Fish and Wildlife Service Law Enforcement
ADDRESS: 3800 Packard Rd., Ste. 160 Ann Arbor, MI 48108
Tel: 734/971-9755 Fax: 734/971-9754 Email: craig_tabor@fws.gov
Biographical Sketch:

NAME: Dan Traynor AFFILIATION: LSSU Aquatic Lab
ADDRESS: 10605 E Traynor Rd. Goetzville, MI 49736
Tel: 906-630-5961 Email: dan.traynor@hotmail.com
Biographical Sketch:

NAME: Betsy Trometer AFFILIATION: US Fish and Wildlife Service, Lower Great Lakes FRO
ADDRESS: 405 N. French Rd. Suite 120A Amherst, NY 14228
TEL: 716-691-5456 x 22 FAX: 716-691-6154 E-mail: betsy_trometer@fws.gov
Biographical Sketch: Betsy is a fishery biologist with the Lower Great Lakes Fishery Resources Office in Amherst New York. Over the years, she has assisted with lake sturgeon projects on the Niagara River and the Genesee River. In 2006, she conducted a survey for sturgeon eggs and larval fish in the lower Niagara River, and assisted with a habitat use and movement study of stocked lake sturgeon in the Genesee River.

NAME: Don Waukechon AFFILIATION: Menominee Nation
ADDRESS: P.O. Box 910 Keshena, WI. 54135
TEL: 715-799-5116 FAX: 715-799-5165 E-mail: donwaukechon@mitw.org
Biographical Sketch: Senior Conservation Rights Protection for the Menominee Nation

NAME: Jim Waybrant, Senior Fisheries Biologist AFFILIATION: Michigan DNR
ADDRESS: Newberry Operations Service Center 5100 S. M-123 Newberry, MI 49868
TEL: 906-293-5131 FAX: 906-293-8728 E-mail: jwaybrant@michigan.gov
Biographical Sketch: I have no experience with lake sturgeon. I work for MiDNR, Fisheries Division, in the Eastern Lake Superior Management Unit. My work generally concentrates on management of inland lakes, inland streams, and streams/rivers seasonally supporting potamodromous species. Historical documents and

Native American legends mention lake sturgeon in the lower Tahquamenon River, but modern surveys have not documented them there. I am curious about what could have changed in this stretch of river. Although the river was subject to intense log flotation and some resultant habitat destruction in the late 1800s, there is now very little evidence of anthropomorphic habitat alteration within the 17 mile stretch.

NAME: Amy Welsh AFFILIATION: SUNY Oswego
ADDRESS: Dept. of Biological Sciences 7060 St. Rt. 104 Oswego, NY 13126
Tel: 315-312-2774 Email: awelsh1@oswego.edu
Biographical Sketch:

NAME: Brian Wesolek AFFILIATION: LSSU
ADDRESS: 613 S. Andre St.
Tel: 989-790-3463 Email: bwesolek@lssu.edu
Biographical Sketch: Senior in Fisheries Management Graduate December ’06 - Senior thesis Genetic impacts of stocking hatchery brook trout into the Ontonagon River

NAME: Marc C. White AFFILIATION: Riveredge Nature Center Inc.
ADDRESS: 4458 West Hawthorne Drive P.O. Box 26, Newburg, WI 53060-0026
Tel: (262) 375-2715 Fax: (262) 375-2714 Email: mwhite@riveredge.us
Biographical Sketch: Director of Research, Stewardship and Adult Education

NAME: Diana L. Wolf AFFILIATION: Menominee Nation
ADDRESS: P.O. Box 1323 Keshena, WI 54135
Tel: 715-799-5116 Email: dwolf@mitw.org
Biographical Sketch: Fish and Wildlife Technician for the Menominee Indian Tribe of Wisconsin studying timber wolves, sturgeon, and black bear on and around our reservation. Still attending College of Menominee Nation for my Natural Resources degree-2 semesters left to go.